DOCUMENT RESUME

ED 075 977 EC 051 807

TITLE	The MUST Project. Final Report.
INSTITUTION	Atlanta Public Schools, Ga.
SPONS AGENCY	Office of Education (DHEW), Washington, D. C. Media Services and Captioned Films Branch.
PUB DATE	[72]
NOTE	201p.
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	Diagnostic Tests; *Educable Mentally Handicapped; Educational Programs; Elementary School Students; *Exceptional Child Education; *Individualized Instruction; *Instructional Media; Mentally Handicapped; Program Descriptions; *Teaching Methods

ABSTRACT

Described are planning and operational phases of the Media Utilization Services for Teachers (MUST) Project, an effort to utilize media to individualize and improve instruction for educable mentally retarded (EMR) elementary school students. Aspects of the planning period (1969-70) treated include staffing and orientation procedures, limitation of project scope to the EMR population, and development of a diagnostic test battery, an instructional system development plan, and a prescriptive activity sheet. The first operational year (1970-71) is evaluated in terms of means used to identify the target population; the plan of operation; the attainment of goals concerning the establishment of resource rooms, identification and development of media, and staff training; and the success of the instructional system development plan. Data on the final project year (1971-72) includes a description of participating schools, a summary of data analyses of children's performances, a profile of one pupil participant, and a summary of the year's activities concerned with the development, implementation, and evaluation of the individualized instruction plan. Appendixes, which comprise the major portion of the document, provide information on qualifications and duties of team members, workshop proceedings, equipment expenditures, an equipment proficiency checklist, production center evaluation, equipment inventory, and data analyses. (GW)

FORM 510 PRINTED IN U.S.A.

FILMED FROM BEST AVAILABLE COPY

ED 075977

EC

THE

MUST Project Final Report

ATLANTA PUBLIC SCHOOLS

EC051807

ATLANTA BOARD OF EDUCATION

William J. VanLandingham, City at Large
Mrs. June Cofer, First Ward
Mrs. LeRoy A. Woodward, Second Ward
Dr. Asa G. Yancey, Third Ward
Charles L. Carnes, Fourth Ward
Jerry Luxemburger, Fifth Ward
Howard E. Klein, Sixth Ward
Dr. Benjamin E. Mays, Seventh Ward
J. Frank Smith, Jr., Eighth Ward
Dr. J. A. Middleton, Ninth Ward

Dr. John W. Letson, Superintendent
Dr. E. Curtis Henson, Assistant Superintendent for Instruction
Dr. Gilbert E. Tauffner, Executive Director, Learning Resources

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ACKNOWLEDGEMENT

The project is indebted to many individuals for their dedicated support over the three year period that MUST was in operation. The extensive cooperation of over fifty members of the Atlanta Public Schools staff makes it difficult to single out the contribution of every person. In addition, the extraordinary assistance provided to the project by the personnel in the U.S. Office of Education cannot be described adequately. However, the unique contribution of Mr. Elwood Bland, Education Specialist, Media Services and Captioned Films, should be noted as the single most valuable reason for any success the project has experienced.

Commendation is also extended to Mrs. Barbara Copelan, Secretary, Department of Learning Resources, Atlanta Public Schools, for her secretarial assistance to the project throughout the three year period.

Gil Tauffner

Gil Tauffner
Director, MUST Project

Elise Gilham

Elise Gilham
Coordinator, MUST Project

The MUST project operated under a contract from the Media Services and Captioned Film Services, Division of Educational Services, Bureau of Education for the Handicapped, United States Office of Education, Department of Health, Education and Welfare. Points of view or opinions stated do not, therefore, necessarily represent official positions of the Bureau of Education for the Handicapped.

TABLE OF CONTENTS

		Page
I.	Background Information	
	A. Rationale for Proposed Project	1
	B. Goals and Procedures, 1969-71	2
	C. Original Organization	2
	D. Staff	5
	E. Procedures for School Identification	5
II.	Planning Period, 1969-70	
	A. Staffing and Orientation	5
	B. Focus Redirection	9
	C. Development of Test Battery	9
	D. Initial Instructional System Development Plan	11
	E. Prescriptive Activity Sheet	11
III.	First Operational Year, 1970-71	
	A. Identification of Population	11
	B. Plan of Operation	17
	C. Evaluation of Goals and Objectives	
	1. Establishment of Resource Rooms	17
	2. Media Identification	21
	3. Media Development	21
	4. Staff Training Activities	25
	D. Instructional System Development Plan	28
IV.	Final Project Year, 1971-72	
	A. Description of Schools	28
	B. Summary of Data Analyses	33
	C. Profile of a Pupil Participant	34
	D. Summary of 1971-71 Activities	35
V.	Project Resumé	36
VI.	Appendices	
	Appendix A - Qualifications and Duties of Team Members	39
	Appendix B - MUST Workshop, January, 1972	47
	Appendix C - MUST Workshop, June, 1971	52
	Appendix D - MUST Workshop, June, 1970	67
	Appendix E - Equipment Expenditures for Production Center at C. W. Hill School	97
	Appendix F - Equipment Proficiency Checklist from Production Center Workshops	99
	Appendix G - Production Center Evaluation	106
	Appendix H - Equipment Inventory	109
	Appendix I - Data Analyses	115

LIST OF ILLUSTRATIONS

FIGURE		PAGE
1	Goals and Procedures, 1969-72	3
2	Team Membership	4
3	Organization	6
4	Staff Employment Schedule	7
5	MUST Staff, 1969-72	8
7	Intermediate Diagnostic Battery	12
8	Final Diagnostic Battery	13
9	Initial Instructional System Development Plan	14
10	Prescriptive Activity Sheet	15
11	Plan of Operation	18
12	Resource Room Plan	19
13	Library Plan	22
14	Final Instructional System Development Plan	29
15	Individualized Instruction Plan	30

I. Background Information:

A. **Rationale for Proposed Project**

In working toward present-day educational goals, educators are called upon to realize the potential of every child, regardless of academic aptitude or background of experience. Furthermore, the educational process demands new and unique combinations of teaching approaches and methods to meet the needs of each individual. These approaches and methods include curriculum decisions as well as media and materials. Literature reviewed indicated that adequate assistance was not being given to teachers in the utilization of various media for instructing exceptional children.

The importance of media in teaching-learning process is recognized. The major concepts of the master plan for the Atlanta School System provided appropriate rationale for the project which would extend the plan to include special media efforts for exceptional children. These concepts include the following:

Learning Resources Center

The Learning Resources Department of the Instructional Services Center reflects the school-system's organizational plan to coordinate and strengthen the learning resource services provided to help achieve current educational goals. The component parts of the instructional services which were merged to create the more functional service to teachers included a long established centralized audiovisual service and a professional library. The provision of funds under Titles I and II of ESEA helped to bring about a study of the functions and organization of these services. This evaluation was one in precept and concept. As a result of this study library services related to classroom activities were merged with audiovisual services, and implementation of more extensive material and media service was planned. The Learning Resources Department has the responsibility to implement the Instructional Materials Center concept on a centralized administrative level, identify and develop new resources, and assist teachers in using them in the classroom.

Differentiated Staff

The differentiated staff is predicated on the belief that the execution of all classroom activities does not require professionally certificated personnel. A differentiated staff, with eight members, can be adapted and appropriately used without costing any more than the salaries for six certificated teachers assigned to six self-contained classrooms with a total of approximately 180 to 200 pupils.

Learning Characteristics of Pupils

In order to identify criteria for optimal utilization of media teachers must focus on the learning characteristics of pupils. The foundation for identifying variables which influence pupil behavior is centered currently in the pre-kindergarten - kindergarten programs. Recognition is given to the fact that all variables are pertinent to learning during one's entire schooling. Some variables, for example, might fade out and lose significance if properly developed after pre-kindergarten or kindergarten years.

Other variables might not become significant until later, for example, at about the fourth or fifth grade. Instruction must be appropriate for the set of variables present among the pupils in a particular classroom. These variables and their pupil-based data must be in a manageable form, and must be so that they can be stored, retrieved, and revised or added to from time to time.

Learning Continuum

There is growing recognition that all pupils fall along a learning continuum. Those who fall on the extreme left have been categorized as being handicapped, those falling on the extreme right have been categorized as being intellectually gifted. In between the two extremes are those pupils labeled normal. The continuum concept places individuals in an order which emphasizes strengths and weaknesses. Those with extreme weaknesses might be legally categorized as being handicapped when in actuality they possess normal learning characteristics and possible some characteristics similar to those of the intellectually superior.

The concepts of a) the Learning Resources Center, b) differentiated staff, c) the learning characteristics of children, and d) the learning continuum provided the basis for the proposal submitted to the Department of Health Education and Office of Education for funding a three-year grant beginning in the fiscal year 1969-70.

B. Goals and Procedures, 1969-72

The long-range objective of the original media utilization project was to assist teachers in the identification, selection, production and utilization of media in the educational continuum at all grade levels. The immediate objective of the project was to plan, develop and demonstrate a systems approach to facilitate the utilization of media to improve instruction for handicapped children. The systems approach included the development and unification of a media team which would plan and set up procedures for facilitating the utilization of media and, subsequently, guide an operational phase to realize the project objective.

The change in focus is reflected in the goals and procedures (figure 1, p. 3). A close inspection of the 1971-72 goals and objectives reveals a return to the goals and objectives as revealed in the original proposal.

C. Original Organization

The original proposal envisioned the development of a media team which would involve effectively existing personnel within the system and the MUST staff to establish a system of services to teachers. This team, which became a part of the regular instructional program, consisted of media and curriculum specialists under MUST, resource teachers at the area level, and classroom teachers, and school resource room personnel. (Team members are listed in figure 2, p. 4. See Appendix A for qualifications and duties of the MUST staff - Central Media Utilization Team.)

GOALS AND PROCEDURES

Figure 1

ORIGINAL PROPOSAL OBJECTIVES/GOALS

The long-range objective of this proposed media utilization project is to assist teachers in the identification, selection, production and utilization of media in the educational continuum at all grade levels. The immediate objective of the project is to plan, develop and demonstrate a systems approach to facilitate the utilization of media to improve instruction for handicapped children. The systems approach includes the development and unification of a media team which will plan and set up procedures for facilitating the utilization of media and, subsequently, guide an operational phase to realize the project objective . .

PROCEDURES

1. Identify and channel information about existing successful practices in the utilization of media in instruction,
2. Diagnose learning problems of pupils and identify the appropriate media needed for the instructional program,
3. Design and develop new media to aid in instruction,
4. Train teachers in the utilization of these media, and
5. Develop models in selected target schools and demonstrate the utilization of media according to the plans developed by the project team.

1969-70 OBJECTIVES/GOALS

The objective of this Media Utilization Project
and demonstrate a systems approach to facilita
zation of media to improve instruction for chil
those classified as Educably Mentally Retarded

PROCEDURES

1. To identify and channel information ab
successful practices in the utilization of
instruction,
2. To identify the appropriate media neede
programs for pupils who have diagnosed
3. To design and develop new media to aid
4. To train teachers in the utilization of th
5. To develop models in selected target sch
providing media utilization services to te
demonstrate the usefulness of these serv

1971-72 OBJECTIVES/GOALS

The objective of the MUST Project is to facilitate the utilization of media to improve instruction for children, primarily those classified as EMR and functionally retarded.

URES 1969-72

OALS

ation Project is to develop
ach to facilitate the utili-
ction for children, primarily
ally Retarded.

formation about existing
tilization of media in

media needed in instructional
ve diagnosed learning problems,

media to aid in instruction,

ization of these media, and

ed target schools, for
services to teachers and to
of these services

1970-71
OBJECTIVES/GOALS

The objective of the MUST Project is to facilitate the utilization of media to improve instruction for children, primarily those classified as EMR and functionally retarded.

PROCEDURES

1. To improve methods for diagnosing specific EMR student learning problems.
2. To identify and channel into the model schools information about existing successful practices in the utilization of media.
3. To identify the appropriate media, in terms of specific learning problems, needed for EMR students in the five model schools.
4. To design and develop new media to aid in such instruction.
5. To train special education specialists, librarians, classroom teachers, and media technicians of the five model schools in the utilization of media identified or developed.
6. To evaluate the effectiveness of types of media or of specific media in alleviating specific learning problems.

ve individualized instructional plans
dren using diagnostic results and
d materials. Once teachers are able
material and teaching techniques
th the individual needs of their
a position to write the instructional
als that will enable learning to take
ater than the pupils have thus far
it should be emphasized again at this
staff is operating under the general
he introduction of media that will
learning that takes place but
timing of the use of the media

4.0 — Implement individualized instruction plans in resource

5.0 — Evaluation

5.1 — Evaluation of 1.0
Determination of training objectives and acceptable performance criteria

5.2 — Evaluation of 2.0
Revision and modification of selected diagnostic battery based on results of referral questionnaire and feedback from conferences with school system personnel.

5.3 — Evaluation of 3.0
Matching of instructional objectives with entering behavior diagnosis, appropriate media,

PROCEDURES

1. Identify and channel information about existing successful practices in the utilization of media in instruction,
2. Diagnose learning problems of pupils and identify the appropriate media needed for the instructional program,
3. Design and develop new media to aid in instruction,
4. Train teachers in the utilization of these media, and
5. Develop models in selected target schools and demonstrate the utilization of media according to the plans developed by the project team.

PROCEDURES

1. To identify and channel information
successful practices in the utilization
instruction,
2. To identify the appropriate media nee
programs for pupils who have diagnos
3. To design and develop new media to a
4. To train teachers in the utilization of
5. To develop models in selected target s
providing media utilization services to
demonstrate the usefulness of these se

1971-72

OBJECTIVES/GOALS

The objective of the MUST Project is to facilitate the utilization of media to improve instruction for children, primarily those classified as EMR and functionally retarded.

PROCEDURES

1.0 — Planning and Organization

The MUST staff will conduct a workshop from June 21 to July 30. Participants in the workshop will be the resource room teachers, resource room aides, and the area resource personnel for special education from the 5 areas which comprise the Atlanta School System.

1.1 — Critique of referral methods and diagnostic instruments.
- 1.1.1 Participant Observer
  Individualized Remediation Activities

1.2 — Critical review of currently used curriculum materials.
- 1.2.1 Scoring of Pre and Post Tests
  Observation of individualized demonstration.

1.3 — Review and analysis of available media
- 1.3.1 Scoring of Pre and Post Tests
  Observation of individualized demonstrations

1.4 — Simulation and group activities in preparing individual instruction plans
- 1.4.1 Evaluation of individualized instruction plans written by workshop participants.

1.5 — Presentation of Resource Room Concept and analyses of roles in delivery system

2.0 — Establishment of a system and methods for diagnosing academic performance. Most teachers are certainly aware that some kind of assessment is necessary before planning an individual pupil's program can take place. However, efficient techniques for academic diagnosis are either unknown to teachers or they lack a system for getting individual assessment accomplished. In many classrooms, academic diagnosis has not progressed past the standardized achievement test level.

2.1 — Development of referral questionnaire
2.2 — Administration of questionnaire (2.1) to all Special Education teachers in the Atlanta School System (250) and analysis of questionnaire findings
2.3 — Review and critique of selected diagnostic battery
2.4 — Dissemination of questionnaire findings and review to school psychological services and return feedback: printed materials and conferences
2.5 — Review and modification of selected diagnostic battery if necessary
2.6 — Administration of diagnostic battery to participating children
2.7 — Internal routing to Activity 3.0, Development of Instructional plans, and external routing to classroom teachers

3.0 — Develop comprehensive individu
for participating children using d
appropriate media and materials,
to match the content material ar
they already know with the indi
pupils, they will be in a position
objectives for individuals that wi
place at a reate far greater than t
experienced. Perhaps, it should b
point that the MUST staff is ope
premise that it is not the introdu
increase the amount of learning t
rather the matching and timing o
to the individual pupil's learning
ser,uence.
3.1 — Specify instructional objectives:
3.2 — Specify entering behavior: analys
for each participant.
3.3 — Select appropriate media for inst
3.4 — Specify delivery system personne
3.5 — Route comprehensive prescriptio
Activity 4.0, Implementation
3.6 — Codify and collect all prescriptio
Activity 5.0, Evaluation, and 6.0

6.0 — Dissemination

6.1 — Dissemination of printed materials:
- A. Final Report
- B. Quarterly Reports
- C. Pamphlets
- D. Journal articles
- E. Inner-system publications

6.2 — Conference presentations
6.3 — Games and materials handbook (Sourcebo
games and materials produced by MUST s
6.4 — Sets of successful Instructional Plans

ation about existing
ation of media in

ia needed in instructional
agnosed learning problems,
ia to aid in instruction,
on of these media, and
arget schools, for
ces to teachers and to
ese services

2. To identify and channel into the model schools information about existing successful practices in the utilization of media.

3. To identify the appropriate media, in terms of specific learning problems, needed for EMR students in the five model schools.

4. To design and develop new media to aid in such instruction.

5. To train special education specialists, librarians, classroom teachers, and media technicians of the five model schools in the utilization of media identified or developed.

6. To evaluate the effectiveness of types of media or of specific media in alleviating specific learning problems.

dividualized instructional plans
using diagnostic results and
terials. Once teachers are able
erial and teaching techniques
e individual needs of their
sition to write the instructional
hat will enable learning to take
than the pupils have thus far
ould be emphasized again at this
is operating under the general
ntroduction of media that will
rning that takes place but
ming of the use of the media
arning problems in a specific

tives: Readiness Level in Reading
analysis of diagnostic results

or instructional objectives
sonnel responsibilities
criptions internally to
on
criptions and route to
nd 6.0, Dissemination

4.0 — Implement individualized instruction plans in resource room situations. It is not enough to know that teachers have learned to write individualized prescriptions. There must be evidence which indicates that the system which is worked out for an individual does improve performance in a given area.

4.1 — Follow instructional system development as shown in Figure 15 on page 30

4.2 — Evaluate progress and recycle to appropriate objective, media, or delivery system

4.3 — Route successful cycles to Activity 5.4, Evaluation

4.4 — Promote parental involvement

5.0 — Evaluation

5.1 — Evaluation of 1.0
Determination of training objectives and acceptable performance criteria

5.2 — Evaluation of 2.0
Revision and modification of selected diagnostic battery based on results of referral questionnaire and feedback from conferences with school system personnel.

5.3 — Evaluation of 3.0
Matching of instructional objectives with entering behavior diagnosis, appropriate media, and delivery system personnel.

5.4 — Evaluation of 4.0
Continuous evaluation of instructional objectives and performance criteria; standardized and informal tests; comparisons with entering behavior performances.

5.5 — External dissemination of overall project progress, successful sets of instructional plans, and cost effectiveness analysis to Activity 6.0, Dissemination.

5.6 — Internal, system-wide, ongoing dissemination of successful sets of instructional plans for use in in-service training sessions.

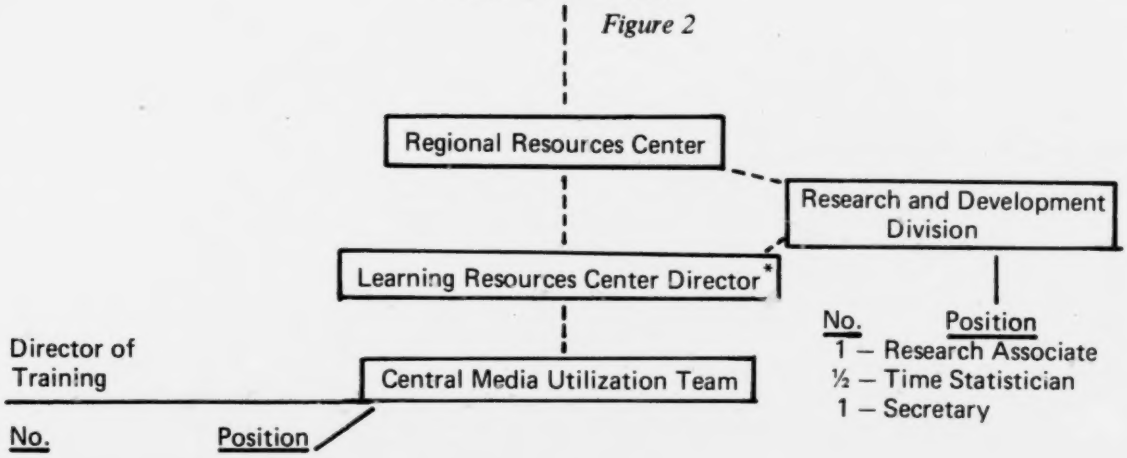
urcebook of all
MUST staff.)
ns

6.5 — Production Center - A materials production center will begin operation at C. W. Hill School in September. The center will open to all teachers at Hill School and to all special education teachers in Area 3. Successful instructional plans, materials and games, etc., will be on file and made available for duplication. Teachers will be encouraged to formulate their own instructional objectives and match them with available media.

6.6 — Slide Presentation (reproduced in the form of filmstrip-cassette packets).

TEAM MEMBERSHIP

Figure 2



No. Position

1 – Coordinator of Media Utilization Team
1 – Media Utilization Specialist
1 – Community Resources Specialist
1 – Publications Aide
1 – Secretary
1 – Electrician Technician
1 – Graphics Artist
1 – Photography Technician
1 – Crafts Specialist
1 – Cost-Account Clerk
Outside Consultative Services
In-System Consultative Services*

Area Level Team Members

No. Position

5 – Resource Librarians*
5 – Media Utilization Assistants
In - Area Consultative Services*

Local School Team Members

No. Position

5 – Media Services Librarians*
5 – Media Utilization Assistants
– Substitute Teachers (600 to 1000 days)

*Currently Employed

The organizational structure within which the project would function, as depicted in the original proposal, is shown in figure 3, p. 6. The Atlanta Public Schools System is divided into five administrative areas. Each area is headed by an area superintendent who in turn has a staff of resource teachers to serve approximately 35 schools. The MUST project, administratively responsible to the Director of the Learning Resources Center and the Assistant Superintendent for Instruction, worked in the schools through the cooperation of area and local schools staffs.

D. Staff

The anticipated staff consisting of curriculum and media specialists, as well as clerical and secretarial personnel, (1969-70) is shown on the employment scheduled in figure 4, p. 7. Focus redirection eliminated some positions and made it necessary to change job titles. Dates of employment by position for the three-year period are indicated in figure 5, p. 8.

Identification and assignment of the MUST staff was executed by the Staff Personnel Services Division. It is the policy of this division to identify, through board policy procedure, candidates for all positions developed under regular and project program requests. Interview sessions include area and central office administrative representatives as well as staff from the requesting agency. All personnel matters including pay, pension, health, etc. are conducted throughout the period of employment by the Division of Personnel Services. These processes are often time-consuming, but also result in better selection and maintenance of staff. This factor necessitated a delay in staffing the MUST project.

E. Procedures for School Identification

The original proposal anticipated one pilot school in each area. Meetings were held with the Area Superintendents and key people on their staff to apprise them of the project and invite them to participate actively in the project operation. The meetings for each area office were held separately. In attendance at each of these meetings were the Executive Director of Learning Resources, who is also the Director of the MUST project, the Instructor-Coordinator for the MUST project, the Research Assistant for the MUST project, the Director of Exceptional Children for the Atlanta Public Schools, the Area Superintendent, the Area Resource Librarian, and the Area Special Education Resource Teacher. The final selection of the school in each area to participate in the project rested with each Area Superintendent.

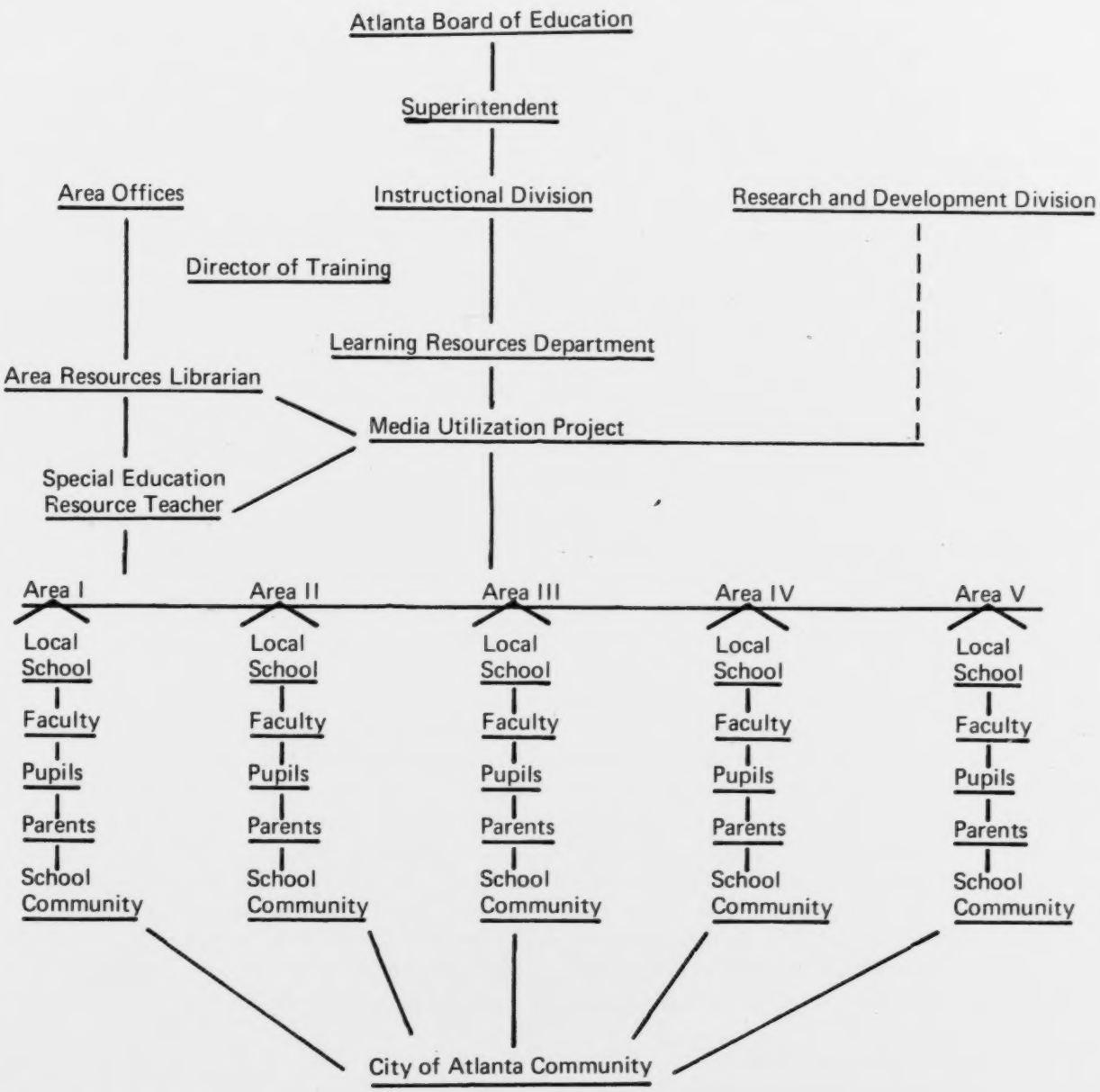
II. Planning Period, 1969-70:

A. Staffing and Orientation

It is evident from figure 5, p.8 that recruitment of a staff for the MUST project was a slow process. However, the Director of the Project was named in the original proposal. Along with his regular responsibilities as Director of Learning Resources, he initiated requests for staff members and processed purchase orders for the basic equipment needed to begin actual work.

ORGANIZATION

Figure 3



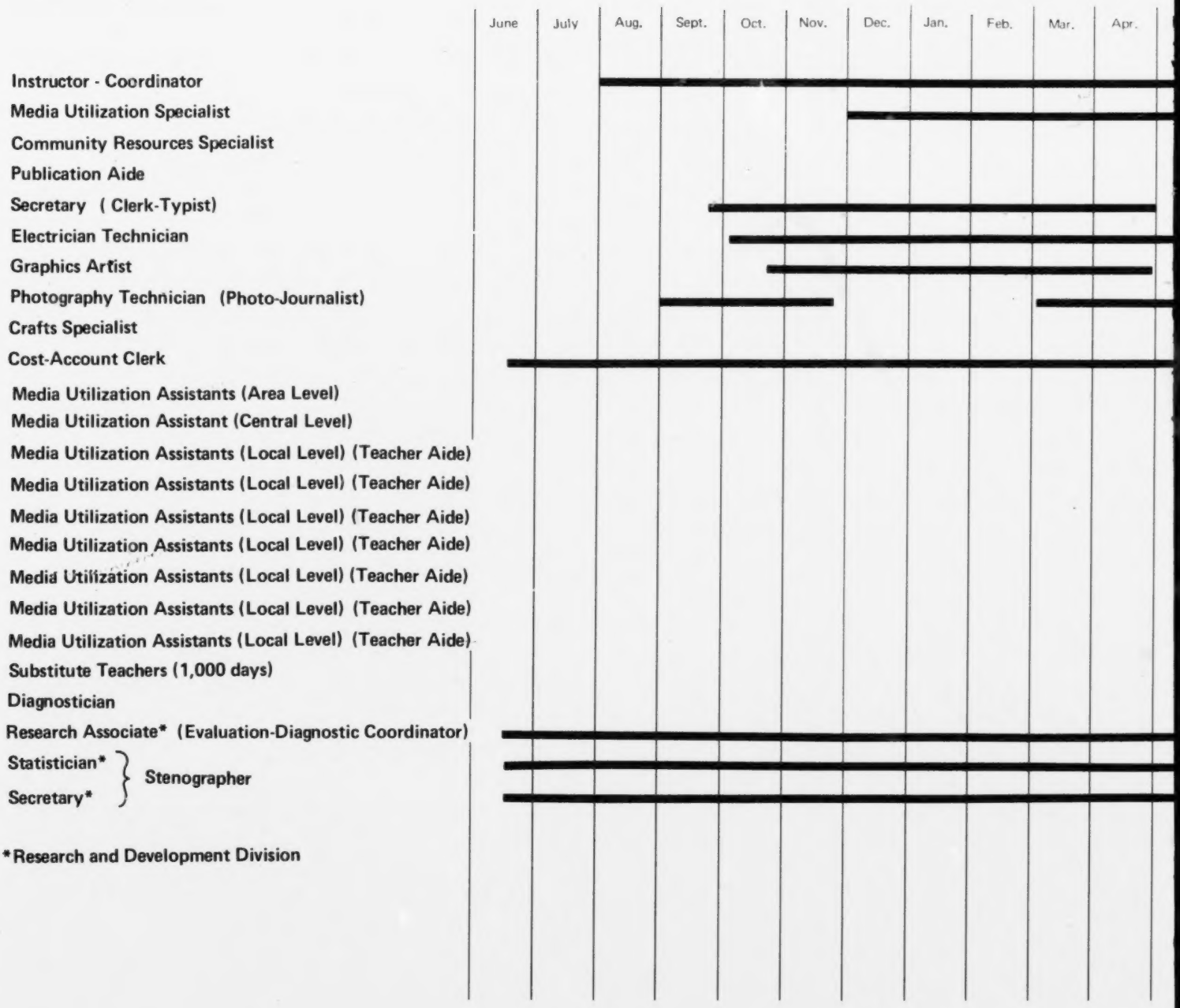
STAFF EMPLOMENT SCHEDULE

Figure 4

Position	No.	No. of Months Employed FY1970												FY1971	FY1972	Total Months
		1	2	3	4	5	6	7	8	9	10	11	12			
Instructor-Coordinator	1	◆	···	···	···	···	···	···	···	···	···	···	···	···	···	36
Media Utilization Specialist	1			◆	···	···	···	···	···	···	···	···	···	···	···	34
Community Resources Specialist	1													◆	···	24
Publications Aide	1							◆	···	···	···	···	···	···	···	30
Secretary (Media Team)	1	◆	···	···	···	···	···	···	···	···	···	···	···	···	···	36
Electrician Technician	1			◆	···	···	···	···	···	···	···	···	···	···	···	34
Graphics Artist	1			◆	···	···	···	···	···	···	···	···	···	···	···	34
Photography Technician	1			◆	···	···	···	···	···	···	···	···	···	···	···	34
Crafts Specialists	1			◆	···	···	···	···	···	···	···	···	···	···	···	34
Cost-Account Clerk	1							◆	···	···	···	···	···	···	···	30
Media Utilization Assistants (Area)	5													◆	···	24
Media Utilization Assistants (Local)	5													◆	···	24
Research Associate	1	◆	···	···	···	···	···	···	···	···	···	···	···	···	···	36
Statistician (½ time)	½	◆	···	···	···	···	···	···	···	···	···	···	···	···	···	36
Secretary (Research and Development)	1	◆	···	···	···	···	···	···	···	···	···	···	···	···	···	36

ORIGINAL PROPOSAL

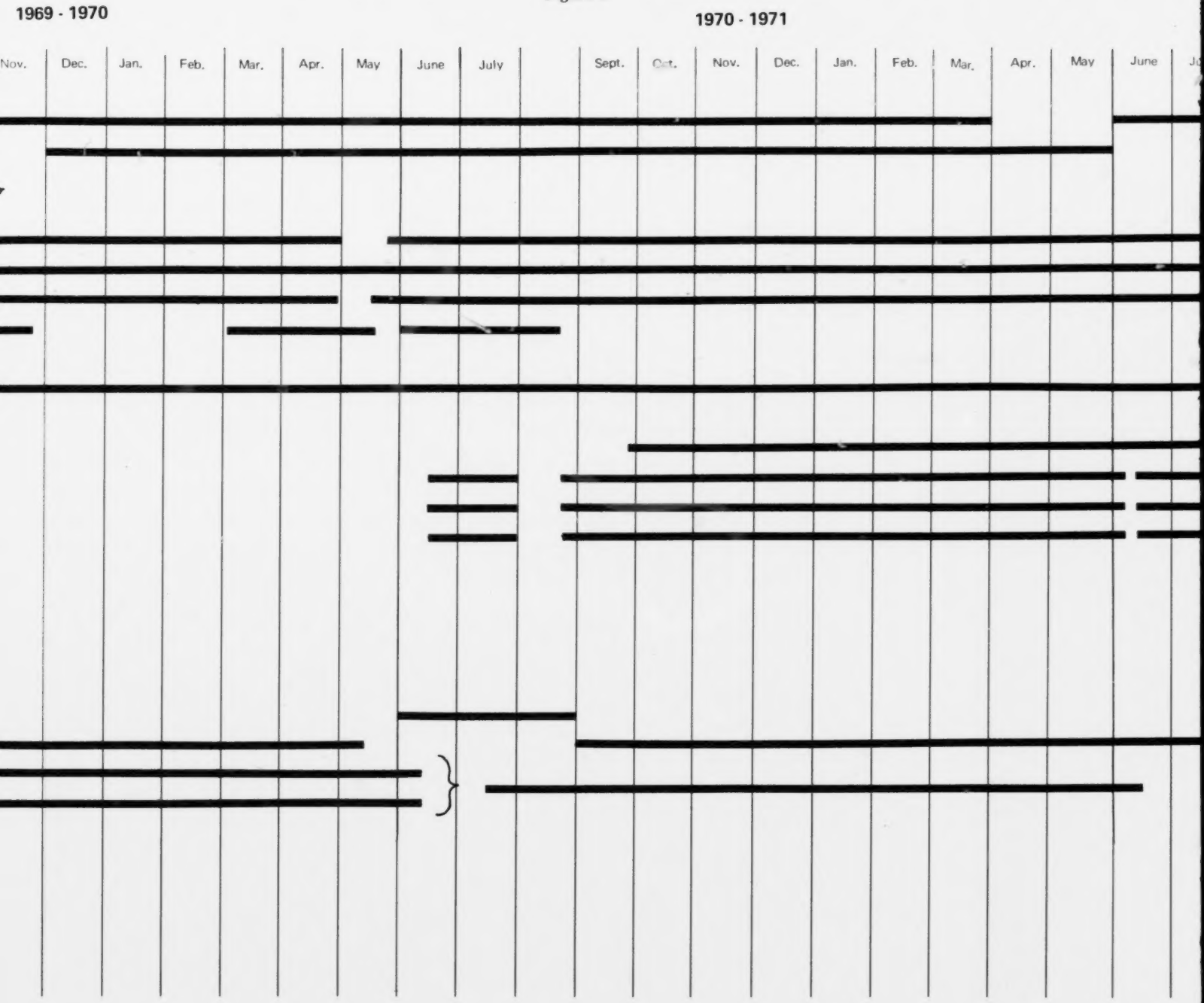
1969 - 1970



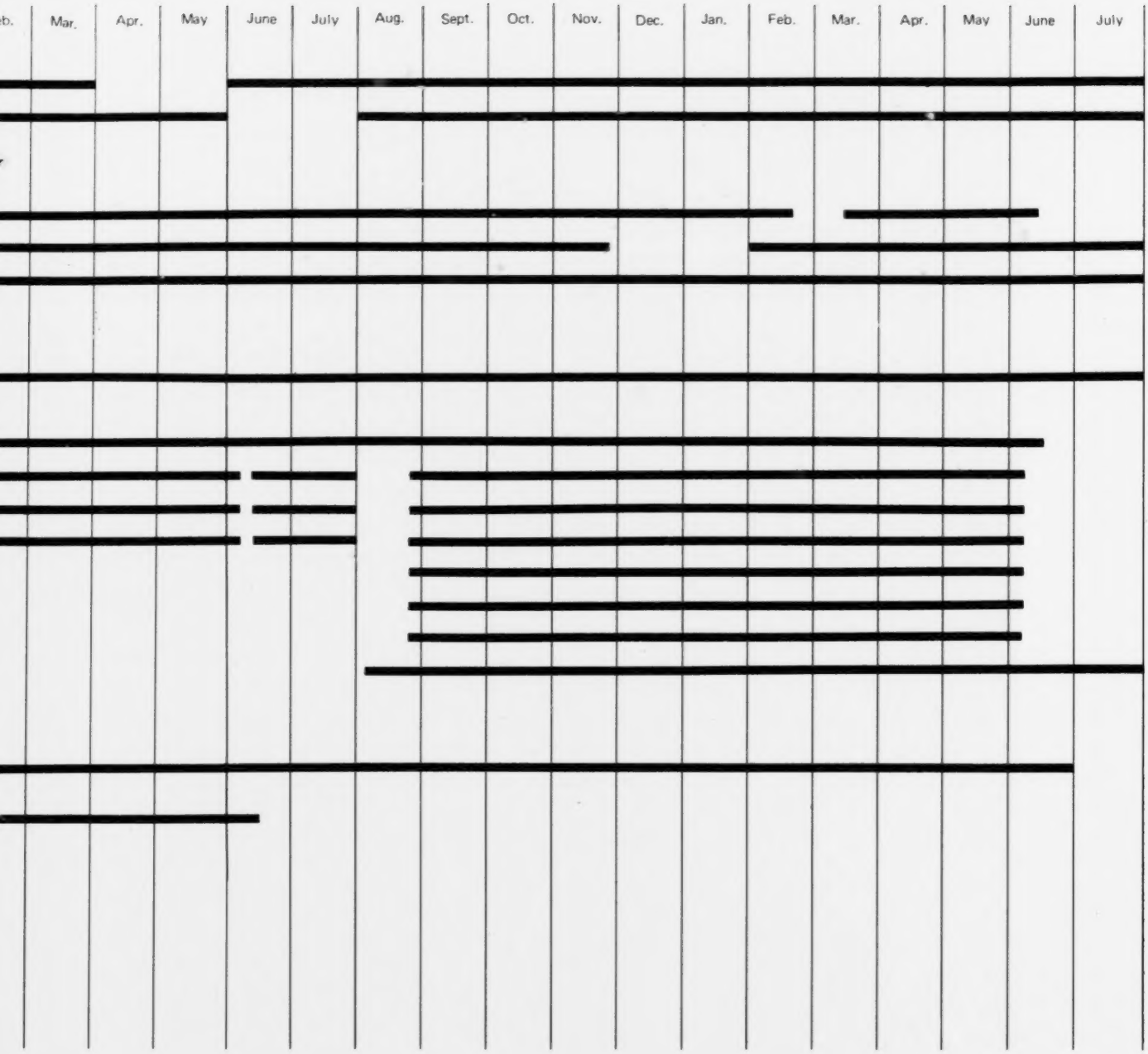
*Research and Development Division

MUST STAFF 1969-72

Figure 5



1971 - 1972


eb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
July

After the identification of the Instructor-Coordinator and the Research Associate, visits were made to various locations in the Atlanta School System and surrounding areas where emphasis was directed toward the handicapped child. These visits and meetings with resource personnel throughout the school system were instrumental in the formulation of plans for the remainder of the planning year.

B. Focus Redirection

At the suggestion of the funding agency, the original proposal was amended to make the first year a planning year for the two subsequent years.

In the original proposal the population to be served carried the broad definition of the "handicapped," therefore it was necessary to identify the area or areas of exceptionality the project would serve. Meetings were held early in the 1969-70 school year with the school system's Director of Exceptional Children and his staff in order to determine priority within their own division of instruction. As a result of these meetings the Media Utilization Services for Teachers (MUST) project staff was familiarized with a new program for the Educable Mentally Retarded (EMR) that was in the early stages of implementation by this group. The format for their program was well outlined and provided an ideal framework within which the demonstration project could operate. The services being provided by the two programs were considered to complement, rather than duplicate, each other. However, it was evident that all areas of the handicapped could not be successfully served by the project. Therefore, with guidance from the Assistant Superintendent for Instruction and the Director of Exceptional Children, the EMR was the target population selected.

The original focus of the project was directed toward the utilization of the actual media--hardware and software. The total absence of an instructional context or framework through which the media could be used was apparent early in the development of the project. By devoting the initial year of the three year period to planning, the staff realized that its goals had to be made more realistic. Neither the teacher nor the students were ready to use the media services the project could provide. Therefore, the focus of the project was redirected from immediate production and hardware implementation to the assessment and diagnosis of the individual needs of each child.

C. Development of Test Battery

The first step in the direction of student diagnosis and assessment was a careful evaluation of traditional methods of diagnosing EMR's or functionally retarded children. The evaluation revealed three important points:

1. Teachers of pupils diagnosed as EMR find it difficult to develop adequate instructional strategies from psychologist's or psychometrist's reports.

2. The battery of tests currently administered does not produce the information needed in making curriculum and instructional decisions.

3. There is not common agreement among psychologists and/or education specialists as to what information is actually needed.

From this information the task for the MUST staff was clear: Develop a battery of tests which reveal the kind of information necessary for planning instructional strategies for individual children.

The budget was amended to include the services of a diagnostician to provide aid in this area. A great deal of time and effort was expended in an attempt to gain insight about individual pupils through the use of the following psychological and diagnostic tests:

Illinois Test of Psycholinguistic Abilities. A diagnostic test measuring specific cognitive abilities in the area of linguistic function.

Marianne Frostig Developmental Test of Visual Perception. This test measures five areas of visual perceptual skills necessary to successful academic functioning.

Peabody Picture Vocabulary Test. Designed to provide an estimate of a subject's verbal intelligence through measuring hearing vocabulary.

Goldman, Fristoe, Woodcock Test of Auditory Discrimination. Provides measures of auditory discrimination ability under two types of listening conditions - quiet and noise. Norms are provided for each subtest with a cut-off score at around the 70th percentile.

Machover Draw-A-Person Test. Used here as projective test to help define areas of emotional functioning which might affect child's academic performance.

Wechsler Intelligence Scale for Children. This test differs from the Stanford Binet in that test items are arranged in successive age levels on the Binet and by subtests on the Wechsler. The WISC provides separate verbal and nonverbal I.Q.'s. The <u>verbal</u> and <u>performance</u> I.Q.'s can have diagnostic significance in the case of children with verbal, academic or cultural handicaps.

Bender Visual Motor Gestalt Test. Lauretta Bender designed this test as a series of nine figures presented one at a time to be copied on a blank piece of paper by the subject.

1. Bender's interpretation is concerned with
   (a) Growth patterns and maturation level,
   (b) Pathological state either functionally or organically induced.

2. Most examiners who interpret Bender results of school children now use Koppitz' scoring procedures which attempt to evaluate "perceptual maturity, possible neurological impairment, and emotional adjustment from a single Bender Test Protocol."

After giving careful study to a series of lengthy diagnostic evaluations , the majority of the staff and the resource room teacher felt that an error had been made in the selection of the instruments to use. The staff was careful not to rely heavily on individual intelligence test results for curriculum guidance, but hindsight reveals that there was a tendency to be too dependent on other kinds of tests that were intended to indicate the perceptual skills, personality, learning style characteristics, etc., of individuals. It must be understood that the decision not to make wide use of these instruments did not stem from a belief that they could not yield valuable information, but rather that the staff could not justify the priority given them. The results gained from the instruments listed, as recorded in the pupil's file folders, did not provide the information needed to write instructional plans for individual students. The staff needed basic knowledge such as: Can he sight read any words? Can he identify by name the letter "m"? Can he hear consonant likeness and differences at the beginning of words? Does he know his name, etc.? Although the staff agreed that both kinds of information - psychological data as well as the academic assessment - should be contained in the diagnosis, realistically there is seldom time for both in the public schools. Furthermore, to obtain the psychological data, the teacher would need to know how to administer the test.

It became apparent that it is not enough to know that a child cannot read, or even that he reads at 3.2 level and is three years behind his grade level. There is evidence that one pupil participant had been in school three years, but could not name the letters of the alphabet when shown. He had a WISC score that implied that he was mentally retarded, and his lack of academic progress reinforced that observation. However, after working twenty minutes a day over a period of weeks using a simple machine (Language Master) and pre-recorded cards, he could say the name of any letter of the alphabet when presented in random order with 100% accuracy.

An intermediate diagnostic battery (figure 7, p. 12) was used for a time by the staff. However, the ceiling of that battery was not high enough. A final diagnostic battery (figure 8, p.13) was designed to measure reading skills through first grade level.

D. Initial Instructional System Development Plan

The Instructional System Plan adopted by the staff is presented in figure 9, p. 14.

E. Prescriptive Activity Sheet

The Prescriptive Activity Sheet was designed to document the implementation of Instructional System Plan (figure 10, p. 15).

III. First Operational Year 1970-71

A. Identification of Population

Faced with the responsibility of selecting the population to be served by the MUST project, the staff registered the following concerns inherent in using an IQ measure to identify the EMR:

INTERMEDIATE DIAGNOSTIC BATTERY

Figure 7

Pupil's Name _____ **School** _____ **Sex** _____

Teacher _____ **Grade** _____ **Birthdate** _____

Pre-Reading Inventory Diagnostic Test				Basic Skills Test							Additional Diagnosis
Using Context	Finding Letters	Listening for Letter Sounds	Matching	Color (NV) Inventory	Color (V) Inventory	Shape (NV) Inventory	Shape (V) Inventory	Number Identification	Number Concept	Letter Identification	
8	18	14	18	12	12	8	8	10	7	52	

MUST PROJECT 1970

FINAL DIAGNOSTIC BATTERY

Figure 8

Pupil's Name_____ **School**_____ **Sex** _____ **Teacher**_____ **Grade**_____ **Birthdate** _____

Basic Skills Test										Pre-Reading Inventory Diagnostic Test				Diagnostic Reading Test - Primer Level				Stanford Diagnostic Reading Test - Level 1								Metropolitan Achievement Test, Form____ ____ Battery					
Color Inventory (NV)	Color Inventory (V)	Shape Inventory (NV)	Shape Inventory (V)	Number Identification	Number Concept	Letter Identification	Following Directions Put an "x" on	Follow Directions Draw a "circle" around	Following Directions Put a "line" under	Using Context	Finding Letters	Listening for Letter Sounds	Matching	Initial Consonant Blends	Short Vowels	Initial Consonant Substitution	Final Consonant Substitution	Reading Comprehension	Vocabulary	Auditory Discrimination	Syllabication	Beginning Sound	Ending Sound	Blending	Sound Discrimination						
12	12	8	8	10	7	52	4	4	4	8	18	14	18	10	6	4	11	42	40	45	20	18	18	36	36						

Additional Diagnosis

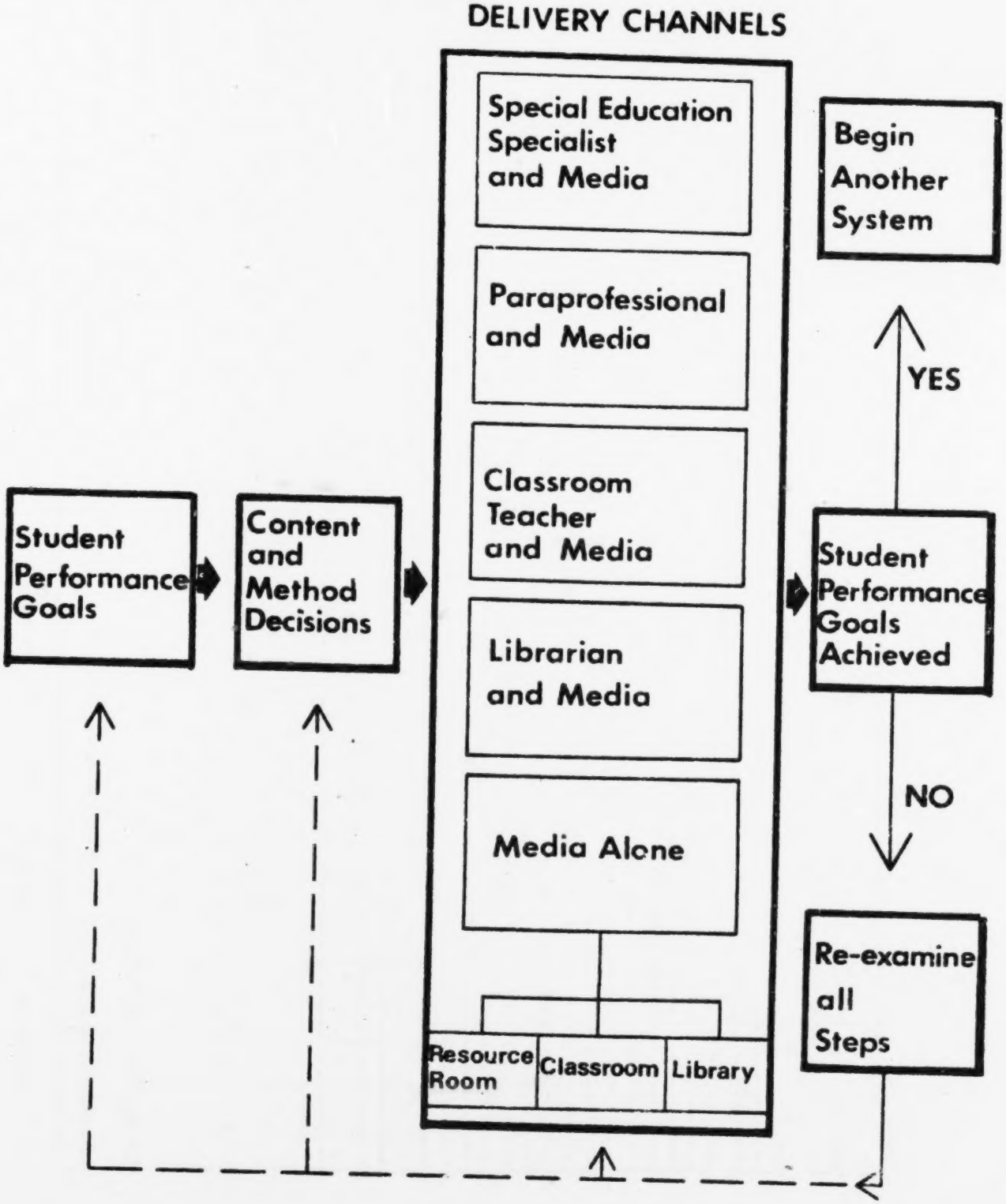
Dolch Sight Vocabulary Test

SET A	SET B	SET C	SET D	SET E	SET F	SET G	SET H	SET I
24	24	24	24	24	24	24	24	24

MUST PROJECT

INITIAL INSTRUCTIONAL SYSTEM DEVELOPMENT PLAN

Figure 9



Name_____ School_____

Date_____

PRESCRIPTIVE ACTIVITY SHEET

Figure 10

Instructional Objective:

Material and/or Equipment Needed:

Delivery Channels

Resource Room Teacher:

Teacher:

Aide:

Supportive Teacher:

Independent Learner:

a) Resource Room

b) Classroom

c) Library

Instructional Objective Achieved: Yes ☐ No ☐

1. In schools where the achievement level is considerably below the national average, what percent of the pupils would "test out" EMR if we had the resources to test them all?

2. In light of the fact that psychometric services are extremely limited in most public schools and, therefore, only a small number of children operating below grade level in disadvantaged schools are receiving psychometric testing each year, how are the few pupils who are being served singled out from their respective classmates for this special service?

3. How many children are there in these schools who never receive testing services and are therefore not singled out for special help to overcome educational deficits?

4. How many children who are labeled EMR are only lacking in instruction rather than the ability to learn and are being hampered by a psychometric label which often causes educators to expect too little of them?

From the previous questions, it is difficult to tell if the problem is one of not being able to do enough testing, or if the tests given are netting a worthless, if not harmful, index of potentiality for learning.

The problems encountered by the MUST staff as they attempted to define the project population were certainly not new problems to the Director of Exceptional Children for the Atlanta Public Schools or his supervisory staff. This group of educators welcomed the MUST staff to join them in their efforts to find new ways of dealing more efficiently with the proper identification and instruction of slow learners in large metropolitan school systems.

Although the original proposal stated that the MUST project would serve five pilot schools, the scope of the project was narrowed to three schools. C. W. Hill was designated as the pilot school. Based on evaluation of class performance,teachers at C. W. Hill selected 140 children who were not showing academic progress. Included in the selected group were identified educable mentally retarded children. The children were grouped as follows:

Second Grade ..... 30 children
Third Grade ..... 27 children
Fourth Grade ..... 27 children
Fifth Grade ..... 30 children

Each group was assigned by the principal to a teacher on the above grade levels.

The Screening Test resuls and personal judgements where used by the teachers to rank the students in each group from the lowest to the highest in achievement. The lowest from each group were selected to receive language arts instructions in the Resource Room.

B. Plan of Operation (see figure 11, p. 18)

C. Evaluation of Goals and Objectives

The information that follows reflects the ways in which the project fulfilled the goals set for the first operational year - the second year of the project.

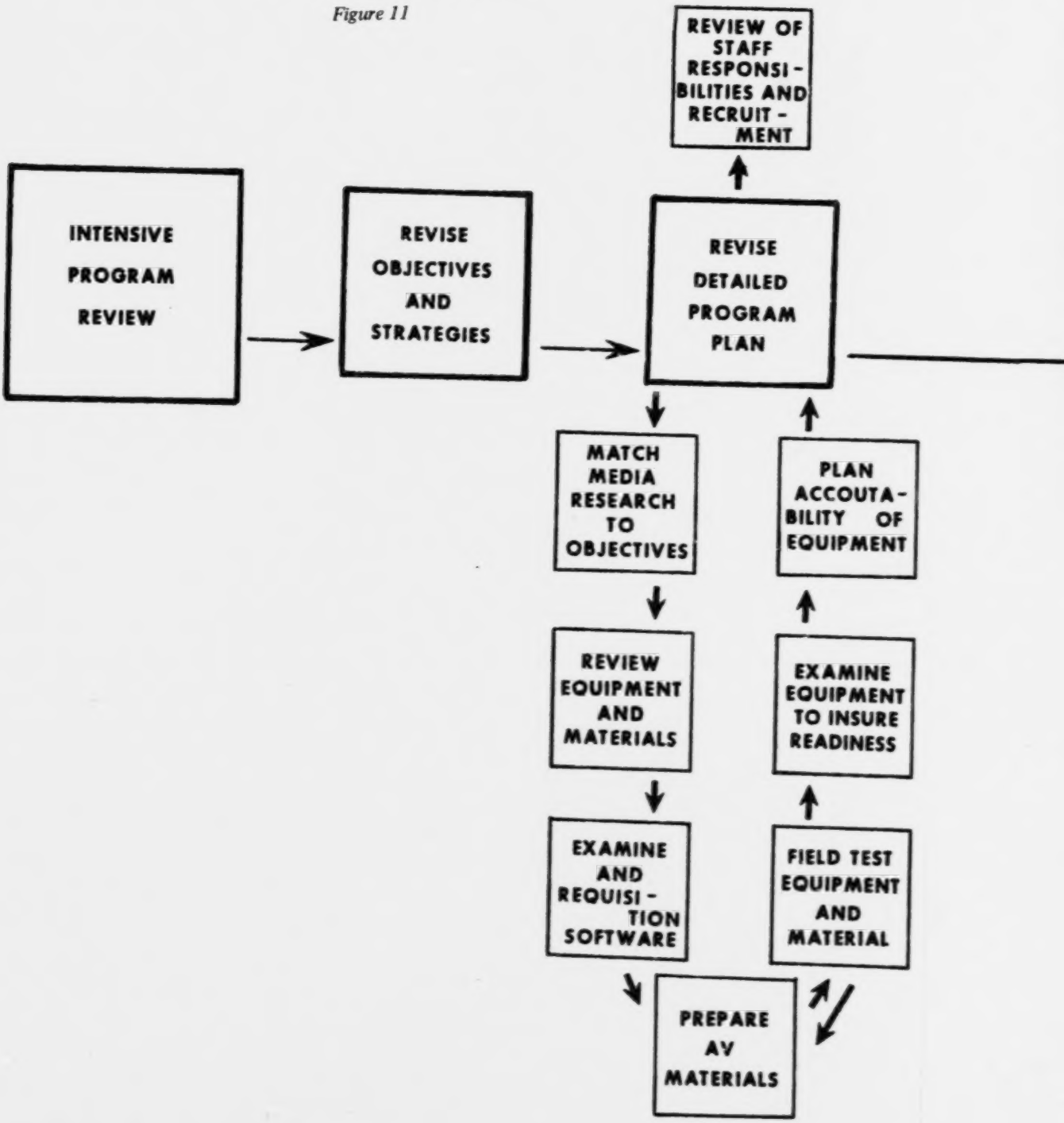
1. Establishment of Resource Rooms

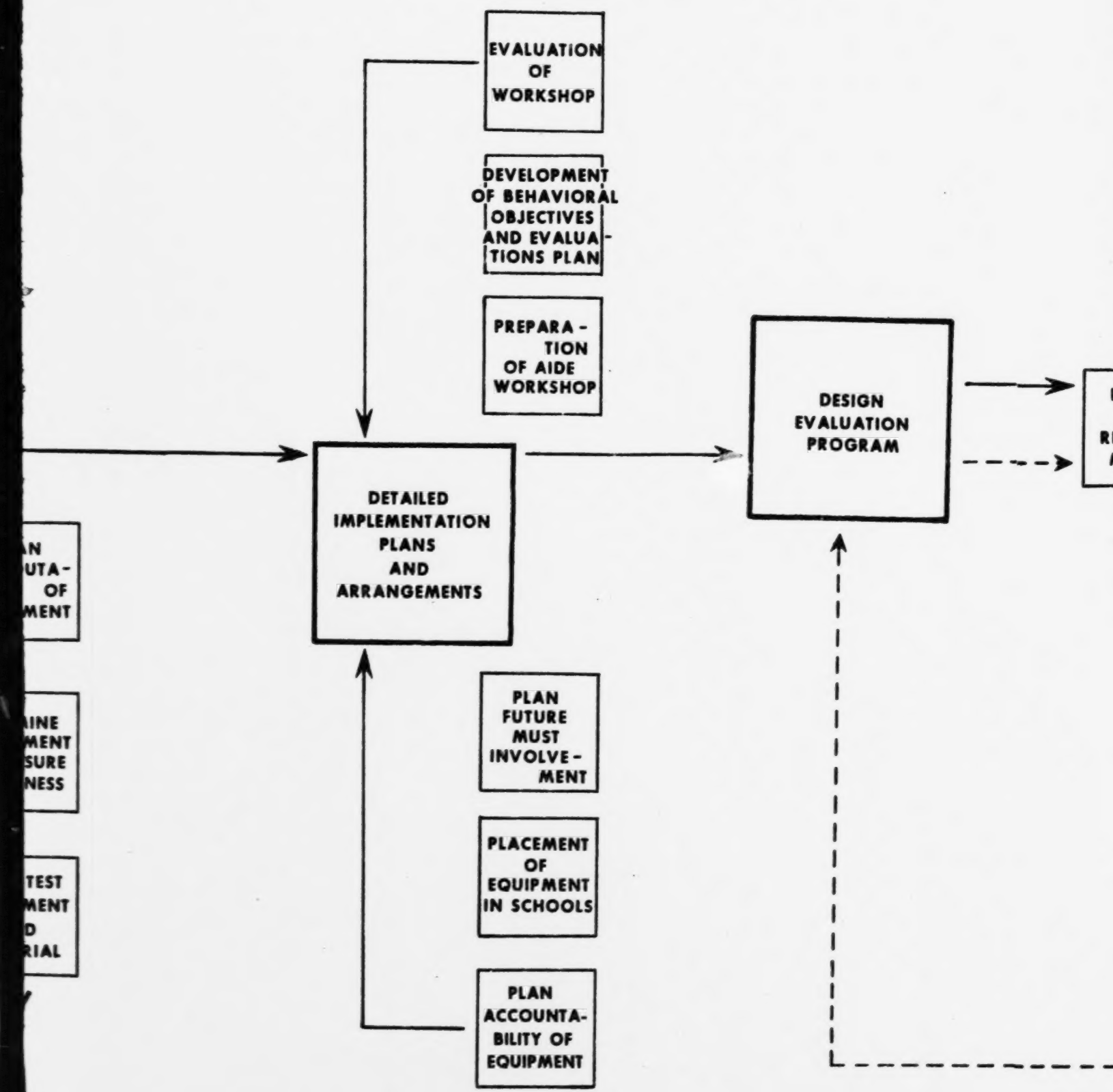
The Department of Special Education for the Atlanta Public Schools was very interested in the Resource Room Plan (figure 12, p. 19) for meeting the needs of the EMR. This plan suggests that EMR Pupils be assigned to regular homerooms, thereby relieving the special education teacher from the full-time responsibility of a self-contained classroom of EMR children and permitting the setting up of an operation where diagnostic and prescriptive teaching for individuals and small groups could be provided at specified times each day. The special education teacher may serve twice as many individuals in this manner, and at the same time, permit EMR pupils to spend part of the day in a regular classroom setting.

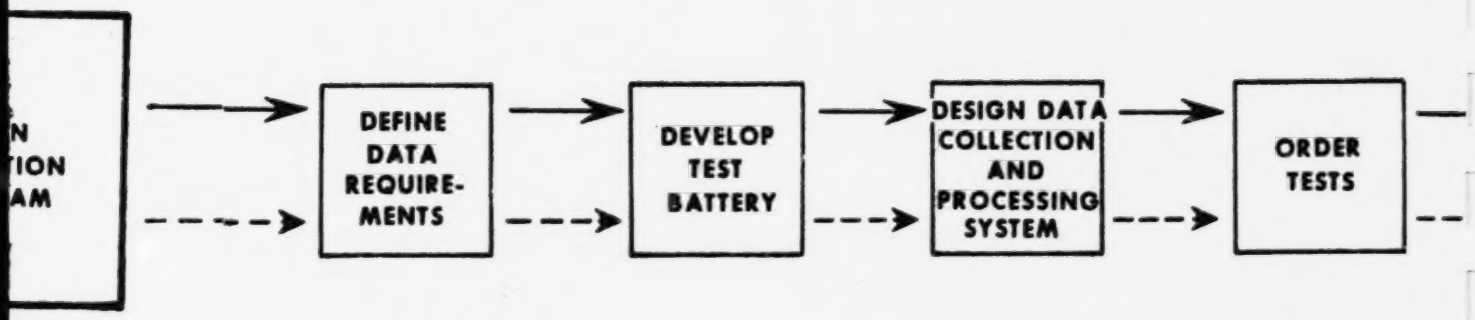
The C. W. Hill School was interested in trying this new staffing plan for the instruction of low achieving pupils but wanted to proceed cautiously for the first year until there was some indication that the Resource Room Plan could be justified. Therefore, the principal and four classroom teachers, working closely with the resource room teacher, decided which students would be served by the project. Each classroom teacher ranked the members of the class according to achievement and the resource room teacher selected the five lowest achievers from each of the four lists to begin the resource room operation. These 20 pupils were selected without regard to whether a measure IQ score would permit their admission to an EMR class. Some of these pupils did have psychometric tests on file which would indicate an EMR standing. It should be noted here that the project staff was committed to the notion that educators have been quilty of labeling socio-culturally deprived pupils as EMR and that such labeling has encouraged the underestimation of the capabilities of man y children. The MUST project staff took the position that an IQ measure alone does little to indicate prescriptive measures to be taken. The resource room was to serve those children whom teachers were having the most difficulty reaching; it was not necessary that the reasons for the difficulty be determined in advance as this was part of the service to be rendered in the resource room diagnosis.

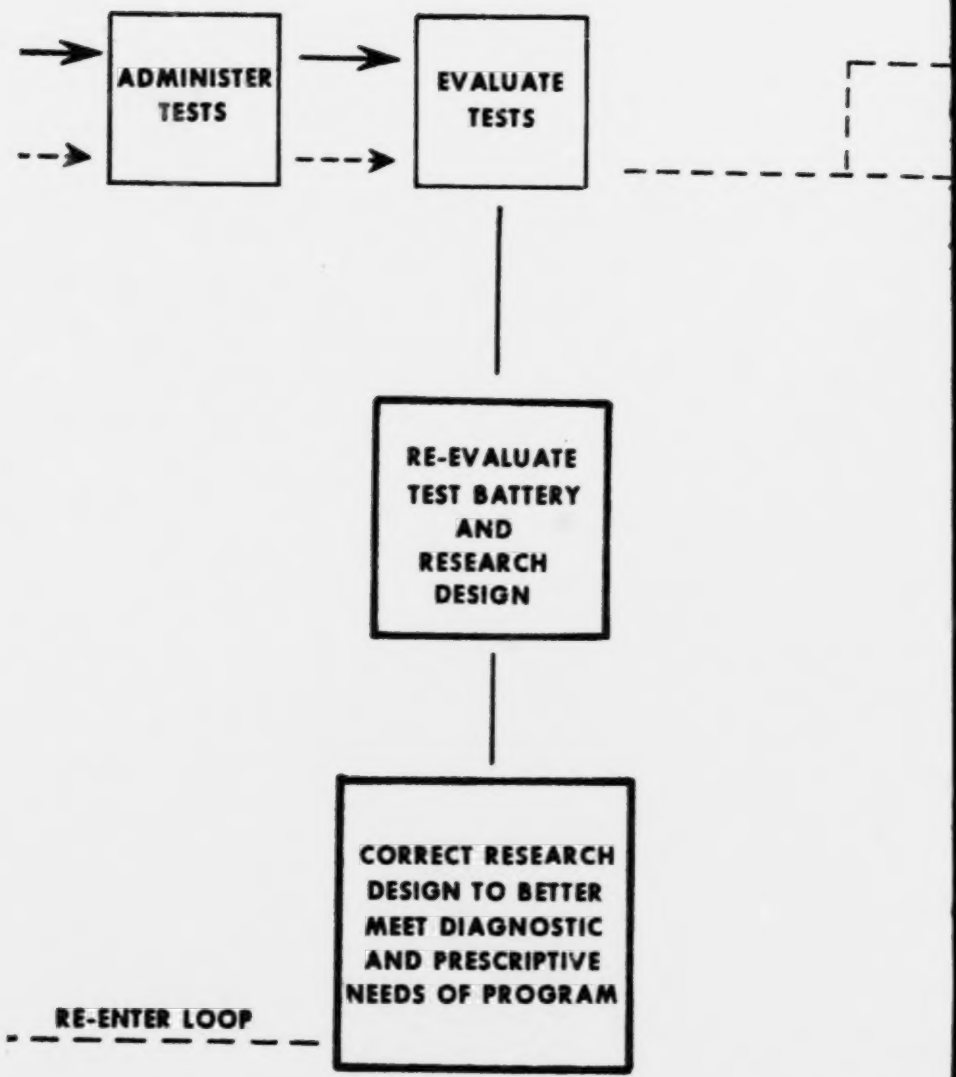
PLAN OF OPERATION - 1970-71

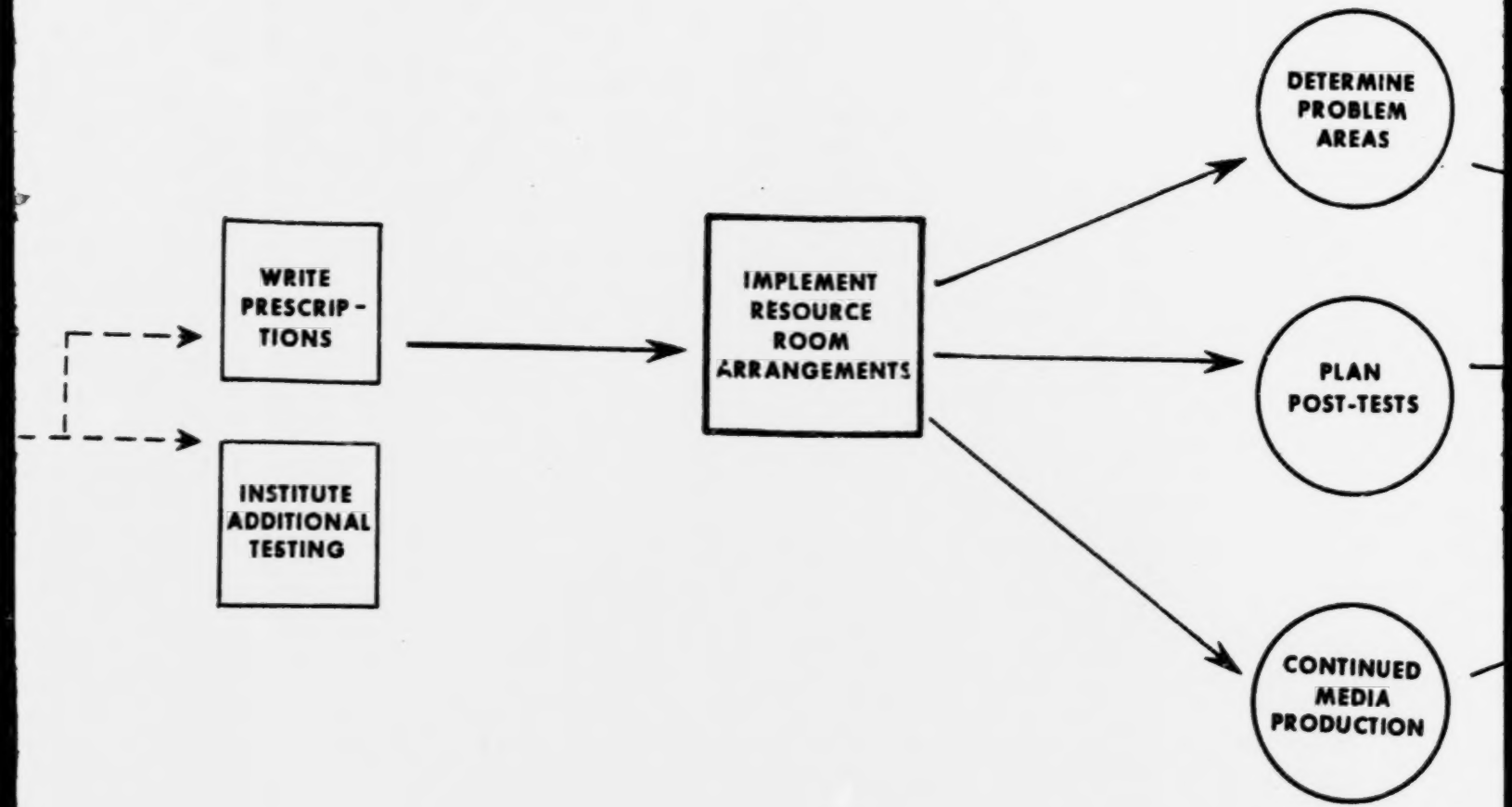
Figure 11

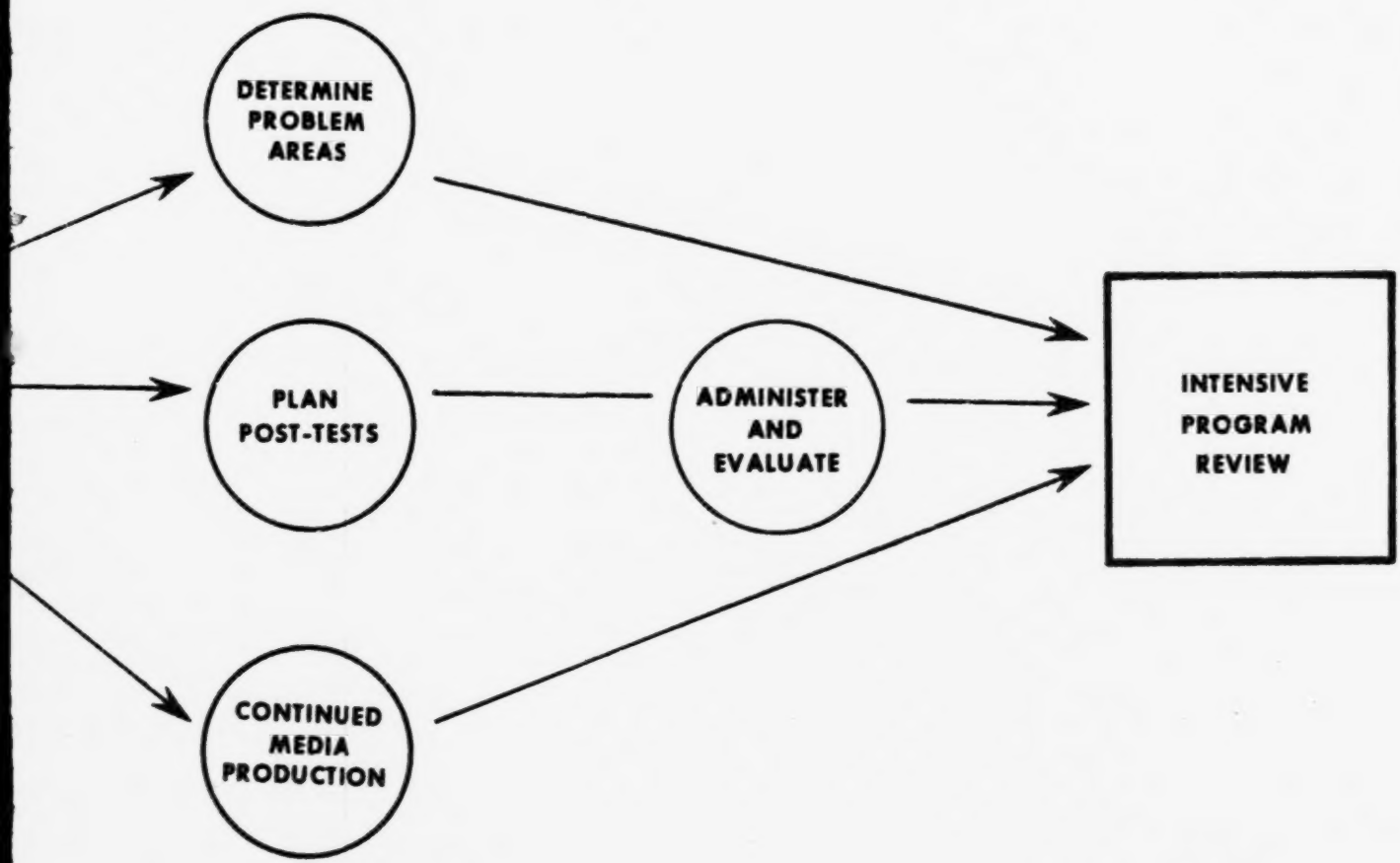

INTENSIVE PROGRAM REVIEW
REVISE OBJECTIVES AND STRATEGIES
REVISE DETAILED PROGRAM PLAN
REVIEW OF STAFF RESPONSI-BILITIES AND RECRUIT-MENT
MATCH MEDIA RESEARCH TO OBJECTIVES
REVIEW EQUIPMENT AND MATERIALS
EXAMINE AND REQUISI-TION SOFTWARE
PREPARE AV MATERIALS
FIELD TEST EQUIPMENT AND MATERIAL
EXAMINE EQUIPMENT TO INSURE READINESS
PLAN ACCOUTA-BILITY OF EQUIPMENT


EVALUATION OF WORKSHOP
DEVELOPMENT OF BEHAVIORAL OBJECTIVES AND EVALUA- TIONS PLAN
PREPARA - TION OF AIDE WORKSHOP
DESIGN EVALUATION PROGRAM
DETAILED IMPLEMENTATION PLANS AND ARRANGEMENTS
PLAN FUTURE MUST INVOLVE - MENT
PLACEMENT OF EQUIPMENT IN SCHOOLS
PLAN ACCOUNTA- BILITY OF EQUIPMENT


N
TION
AM
DEFINE DATA REQUIRE-MENTS
DEVELOP TEST BATTERY
DESIGN DATA COLLECTION AND PROCESSING SYSTEM
ORDER TESTS


ADMINISTER TESTS
EVALUATE TESTS
RE-EVALUATE TEST BATTERY AND RESEARCH DESIGN
CORRECT RESEARCH DESIGN TO BETTER MEET DIAGNOSTIC AND PRESCRIPTIVE NEEDS OF PROGRAM
RE-ENTER LOOP

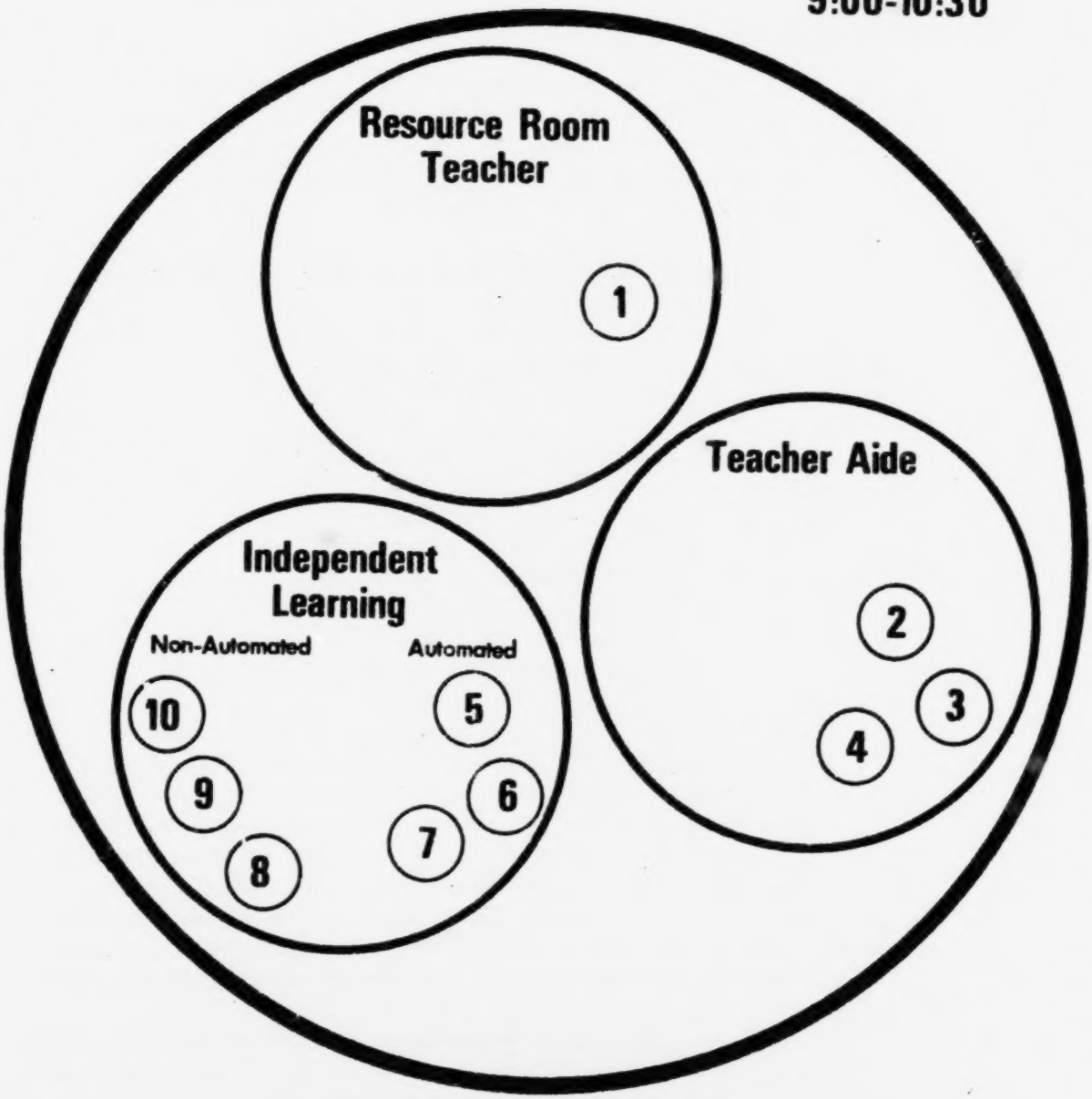

WRITE PRESCRIP-TIONS
INSTITUTE ADDITIONAL TESTING
IMPLEMENT RESOURCE ROOM ARRANGEMENTS
DETERMINE PROBLEM AREAS
PLAN POST-TESTS
CONTINUED MEDIA PRODUCTION


DETERMINE PROBLEM AREAS
PLAN POST-TESTS
ADMINISTER AND EVALUATE
CONTINUED MEDIA PRODUCTION
INTENSIVE PROGRAM REVIEW

RESOURCE ROOM PLAN

Figure 12

FIRST PERIOD
PUPILS 1-10
9:00-10:30



Individuals rotate from one activity to another during the 90 minute period. Ideally, each pupil receives instruction in all three learning stations every day. Second and third periods are conducted in a similar manner from 10:40 to 12:10 for pupils 11-20 and from 12:40 to 2:10 for pupils 21 to 30. From 2:10 until school closes is preparation and planning time for the Resource Room Teacher and the Teacher Aide.

The resource room began operation with only 20 pupils. The resource room teacher was also available to the classroom teacher team for consultation about additional pupils who needed to receive individual instruction in basic skills areas.

The MUST staff realized the necessity of knowing the basic achievement level of the 140 pupils who had been selected as the lowest achievers in the Hill school. The following test battery was administered to provide base line data upon which more individualized diagnosis could be planned:

Houghton-Mifflin Pre-Reading Inventory, Part II - Diagnostic Test

a. Using Context
b. Finding Letters (a receptive skill)
c. Listening for Letter Sounds
d. Matching Sounds to Symbols

Basic Skills Test (constructed by MUST staff)

a. Color Inventory (receptive)
b. Color Inventory (expressive)
c. Shape Inventory (receptive)
d. Shape Inventory (expressive)
e. Number Identification (expressive)
f. Number Concept
g. Letter Identification (receptive)

Observation of the diagnostic test results obtained from the children at C. W. Hill led the MUST staff to expand the program by developing a library plan to supplement resource room activities. Through the library plan thirty-two children, not serviced by the resource room - but needing assistance, were scheduled to work with a teacher aide. The teacher aide was trained to follow an individualized instruction plan based on the areas indicated on the test results. The instructional plans for each child were prepared by the staff with assistance from the regular classroom teacher. The following steps were carried out in the development of the library plan.

a. Scheduling plans were devised to insure maximum effectiveness.
b. Necessary activities, materials, and equipment were determined.
c. Evaluation procedures were developed.
d. Children were identified to participate in library program.
e. The operational plan was implemented.
f. The pupils' progress was evaluated.
g. The MUST staff conferred with teachers to encourage independent library work by students.
h. The library concept and its impact on a school were reviewed.
i. A model for the incorporation of the library concept into any school on various levels was constructed.

The model developed is shown in figure 13, p. 22.

2. **Media Identification**

With the explosion of promising and successful practices in the utilization of media the project used the following procedure to identify and channel into the model schools, information regarding media used in pilot schools:

a. A MUST staff member evaluated media using the evaluation form designed by the school system.
b. The MUST staff reviewed the evaluation report.
c. The evaluation report was discussed with the resource room teachers. The resource room teachers and the MUST staff determined the best utilization of the media.
d. The media with the plan for utilization was presented to the principal.
e. The resource room teacher apprised the aide of media and the utilization of media.
f. Classroom teachers were informed about the media and the utilization of media by the pupils in their classrooms.

3. **Media Development**

In the initial phases of the project we produced materials based on anticipated needs. However, we learned to wait until the needs were clearly defined before materials were designed. There was an abundance of commercially prepared materials of a general nature on the market which met many of our needs. Therefore, the staff decided to produce only those materials that were not available commercially.

The materials designed and/or developed follows:

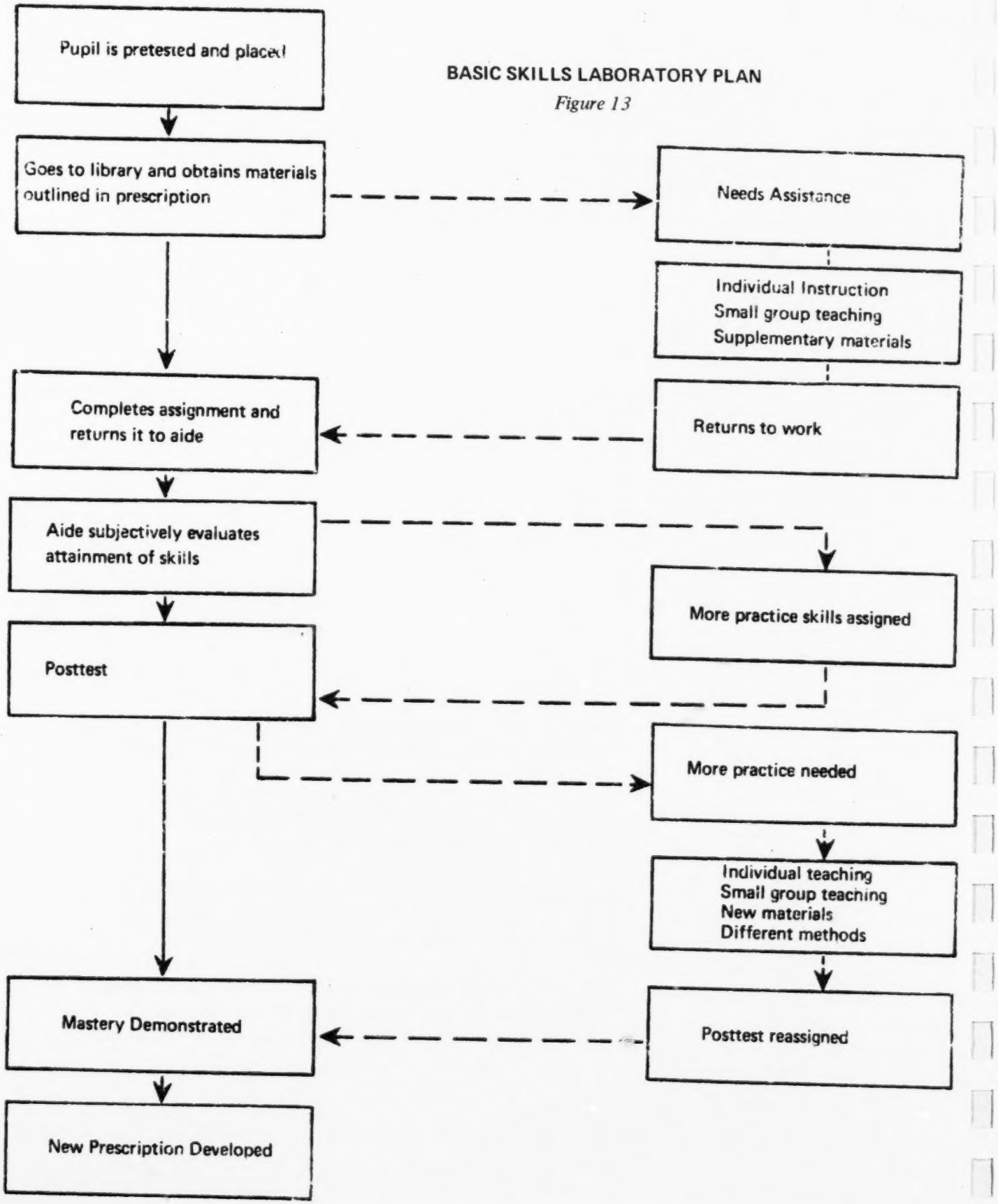
Operation of the Sound-a-matic III. A color slide presentation to be viewed via the carousel projector with the audio portion on a Sound-a-matic IV. The purpose of the program is to instruct teachers in the techniques of electronically programming a piece of audio equipment that will allow pupils varying response times for individualized instruction.

The Patch Cord. A super 8mm film instructing teachers how to use a patch cord for transferring disc recordings to reels and/or cassettes, or reels to cassettes.

Color Labeling Test. A 24 page booklet which tests for receptive and expressive color (12 colors) labeling ability. Adapted from a test devised by the New York Institute of Developmental Studies.

BASIC SKILLS LABORATORY PLAN

Figure 13



Shape Labeling Test. A 16 page booklet which tests for receptive and expressive shape (8 shapes) labeling ability. Adapted from a test devised by the New York Institute of Developmental Studies.

Numbers Test. Brief tests for identifying numbers and simple number concepts.

Alphabet Test. Tests for identifying capital and small letters at the expressive level.

Operation of the Sound-a-matic IV. As teachers were prepared to program on the Sound-a-matic III, pupils were prepared to receive the programs on the Sound-a-matic IV. A color slide presentation accompanied by a synchronized audio portion was used to teach the pupils the operation of this medium, via the medium. A cartoon character in clay, named Otto, appears in the slides and talks with the pupils to deliver the instructions. Pupils actively respond by operating a Sound-a-matic.

Color Games. Two color games, both of them in the lotto format. One game teaches color identification while the other stresses the reading of color names.

Consonant Sound Game Board. This game can be played at two different levels by substituting different cards and using one board. The first level requires matching letter sounds for their likenesses or differences. The second level requires matching a letter sound with the appropriate letter symbol. Both levels are self-corrective and can be played without any prior knowledge of letter sounds or letter identification.

Consonant Sound Game Wheels. This game can be played at two different levels by using the same cards, but substituting different wheels. The first level requires the player to match letter sounds while the second level teaches sound-symbol relationships. Both of these games are self-corrective and require no previous knowledge of letter sounds or letter identification.

Alphabet Game. This game was worked out in collaboration with the Follow Through Project Staff. The game is one of matching letters and in the initial stages of playing require playing in the presence of someone in possession of letter identification ability. The game is ideal for the initial introduction of letter identification.

Alphabet Drill Cards. These were prepared for the Audio-Flashcard Reader and drill the pupil on knowledge of small letter and capital letter identification.

Color Drill Cards. These cards have also been prepared for the Audio-Flashcard Reader and drill the pupil in color identifications. A 3 inch square of color is on each card (12 colors) and the student responds in the same manner as the above drill set.

Transfer of Reel Recordings to Cassette. The State Education Department - Audio Visual Division, has a very substantial tape library that is available to us without charge. We ordered 20 titles on reel tape and transferred them to cassettes so that our teachers may use them on the cassette playback units the project provides.

Transfer of Disc Recordings to Cassette.

1. The Atlanta School System - Audio Visual Division, has a substantial library of records with accompanying filmstrips. We have ordered 20 titles and transferred the disc recording to cassettes so that these units may be used with the Study Mate filmstrip projector and cassette playback units for individualized instruction. We also recorded a section at the end of each one of these cassettes that provided a comprehension check of the story's content. When a child listens to these stories, he can respond at the end of the story on a ditto activity sheet.

2. The disc recordings that accompany Little Things that Count, a character building series from Eye Gate House Inc., were transferred to cassette.

Alpha One, a multi-sensory beginning reading and spelling program to determine which emphasizes word mastery through phonics was examined from a teacher-oriented presentation for group learning to an automated individualized program.

Pre-Printed Alphabet Sheets. Each letter of the alphabet (small, capital, and combination of small and capital) was printed on an 8½ x 11 sheet of paper which had been ruled into two inch squares and run on the Roneo.

Pre-Printed Picture Sheets. Black and white illustrations which depict people, objects, or things that begin with a letter of the alphabet were drawn on 8½ x 11 sheets of paper. One letter of the alphabet is printed in capital and small form in the left hand corner at the top of the sheet and the right hand corner at the bottom of the sheet. These sheets can be used for charts or making games.

4. Staff Training Activities

In order to train special education specialists, librarians, classroom teachers, and media technicians of the model schools in the utilization of media, the following activities took place:

Distar (Direct Instructional System for Teaching Arithmetic and Reading) Program:

As a follow-up of the orientation to the Distar Program presented during the June Workshop, the Resource Room teachers in the pilot schools that planned to use the Distar Reading Program attended a two-day workshop sponsored by Science Research Associates. An overview, the rationale, and specific techniques for teaching the Distar System were presented in the workshop. Each participant was given a test based on the information presented in the workshop. The results of the test indicated that the participants mastered the information.

Developing Learning Readiness Program:

After the presentation of this program during the June Workshop, the Resource Room teachers expressed a desire to use this program. In order to get maximum results from the program, a workshop was planned (in cooperation with consultants from McGraw-Hill) for October 14, 1970 from 1:00 - 4:00 p.m. Participants in the workshop included the Resource Room teacher, Physical Education teachers, and Lead teachers from the pilot schools.

Super 8mm Film Loops:

Representatives from the MUST staff attended a workshop sponsored by the Department of Learning Resources of the Atlanta Public Schools. It was designed to help participants explore, creatively, the great flexibility and usefulness of Super 8 Film Loops. Using the format presented in the workshop, the staff planned a workshop for each pilot school. The objectives of the planned workshop were:

To show that individual loops offer limitless possibilities.
To show that film loops ask, as well as answer questions.
To emphasize the use of film loops for individualized and small group instruction.

Hoffmann Reading Program:

The distributor of the program agreed to conduct a workshop for one MUST project school and supply, on loan, the components of the program. The workshop was set for October 13, 1970 at Miles School.

Workshop for Teacher Aides:

A workshop for teacher aides, (teacher aides performed the duties designated in the proposal to be carried out by media technicians) to be placed in pilot schools, was held August 24-28, 1970, from 8:15 a.m. - 3:00 p.m. The specific objectives of the workshop were proficiency in operation and an understanding of utilization of equipment to be used in the pilot schools. Each participant demonstrated mastery of operation and an understanding of utilization of equipment by carrying out the following behavioral objectives:

Using a cassette recorder, prepare a tape for a classroom tape library by reading a short selection from children's literature (maximum 15 minutes).
Using a record player, a reel-to-reel tape recorder, and a patch cord transfer a disc recording to a reel-to-reel tape.
Using a record player, a cassette recorder, and a patch cord transfer a disc recording to a cassette.
Using a reel-to-reel recorder, a cassette recorder and a cord transfer a reel-to-reel tape to a cassette.
Using magazine pictures or original art work, prepare five audio-flashcards to teach, or reinforce the teaching of, the concept of <u>two</u>.
Using magazine pictures, old workbooks, or original art work, prepare five language master cards to give practice and reinforcement in hearing rhyming words.
Using an empty carousel tray, a carousel projector with a remote cord, a telescreen, and eight prenumbered slides prepare a presentation for the group.

In addition to the operation of equipment to be used in pilot schools, the participants were given background information on the utilization of equipment that was necessary for successful demonstration that each behavioral objective had been met. Background information included:

1. a tour of the library and the Department of Learning Resources.
2. a prepared paper on "Tips for Recording."
3. rationale and techniques for using a patch cord.
4. methods for teaching concrete concepts.

Individualized In-Service Activities in Pilot Schools:

C. W. Hill

Cooperation planning sessions with Resource Room Teacher regarding September Activities.

Orientation Session with Principal, Resource Room Teacher, Special Education Teachers, Librarian, and teachers of the children identified as the lowest one hundred in grades two - five.

Individual Conferences with the Librarian to explain the MUST project and her role in the MUST project. (The Librarian is new to the school and was therefore not included in the June Workshop.)

Demonstration and discussion of the components of the "Basic Skills Test" and "Pre-Reading Inventory."

Orientation to Computer Based Programs (ordered and received programs for a representative group of EMR children in the project).

Discussion involving procedures to be used in administering the Learning Methods Test.

Explanation of Format used for prescriptive activity sheet.

L. P. Miles

Orientation Session with Faculty during pre-planning week (August 27).

Conferences with Resource Room teacher and Principal regarding structural plan for the operation of the Resource Room; training given the teacher aide; and media available or needed in the Resource Room.

Jessie Mae Jones

Conferences with Principal, Area Resource teacher, and Resource Room teachers to determine the school's plan of operation.

This school had previously operated self-contained EMR classes.

Orientation session with Principal, Resource Room teacher, Librarian and teachers of children selected for Resource Room activities.

Planned with Area Resource teacher, and Resource Room teachers for a follow-up session for classroom teachers, the principal and the Area Supervisor of classroom teachers regarding the philosophy and rationale for Resource Rooms.

D. Instructional System Development Plan

While individualization is the major theme of the MUST approach, the most crucial question is whether or not the individualized instruction enabled the child to achieve a specific objective. The Instructional System Development Plan (figure 14, p. 29) identified the procedures as follows:

1. Assessment
2. Statement of Behavioral Objective
3. Design Instructional Strategy
4. Implement the Designed Instructional Strategy
5. Assessment to Determine Success or Failure
6. Appropriate Movement: Re-Examine Step - New Objective

To document the action taken after assessment, the Prescriptive Activity Sheet (figure 10, p. 15) used during the planning period, was modified. The modified plan became the Individualized Instruction Plan (figure 15, p. 30).

IV. Final Project Year - 1971-72

A. Description of Schools

Each school in the project has different characteristics and therefore provides an opportunity for varying emphasis to be stressed in the project. The schools are listed here along with some brief data which will provide readers with some descriptive material.

C. W. Hill

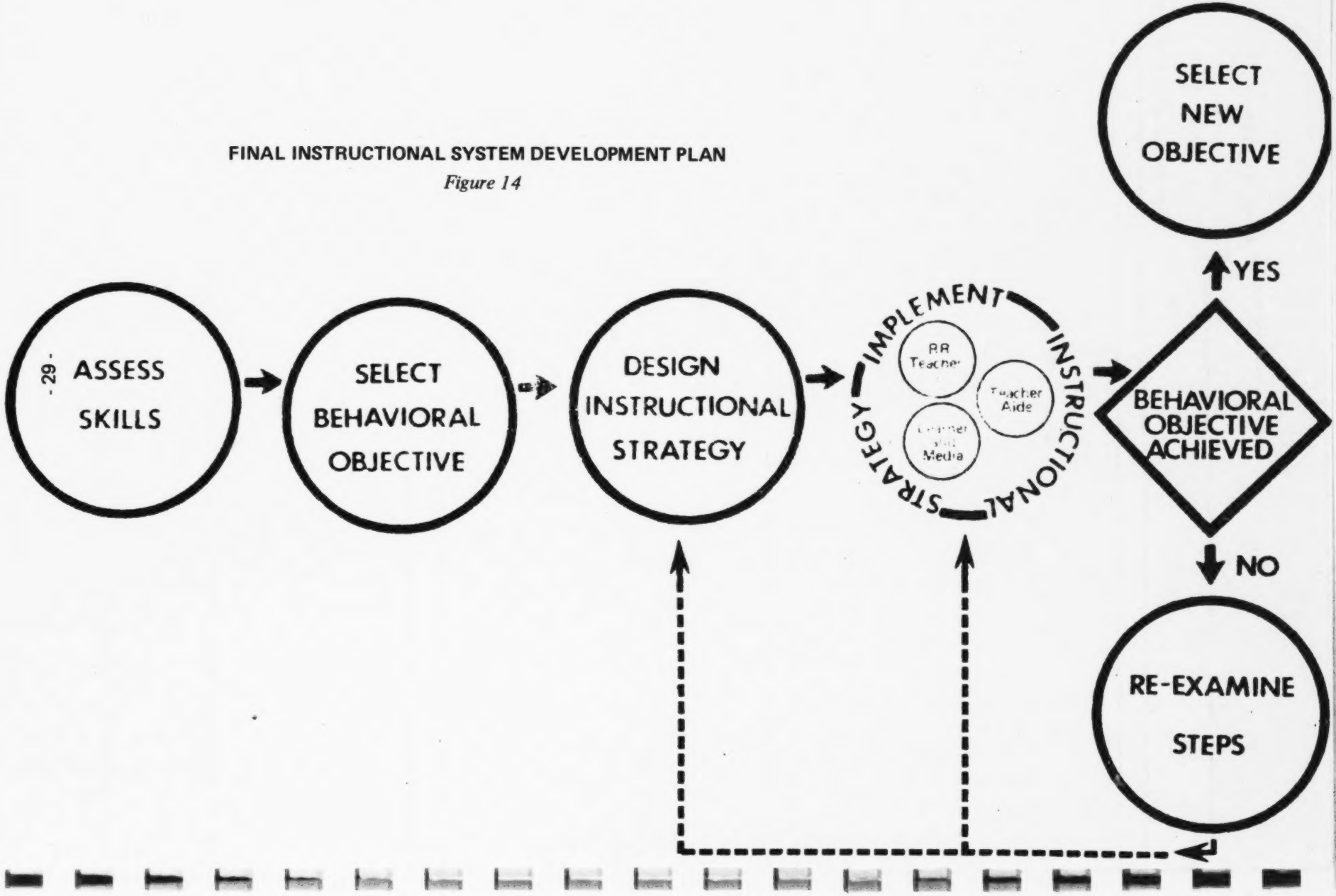
According to 1960 census figures, 58.5 per cent of the children enrolled in C. W. Hill School came from families whose annual income amounted to less than $3,000. The city-wide testing conducted by the Atlanta School System in the spring of '70 revealed the statistics shown in Table 1. MUST will be working with 70 children at C. W. Hill.

TABLE 1
METROPOLITAN ACHIEVEMENT TESTS
ELEMENTARY BATTERY, FORM C
GRADES 4, 5, 6 AND 7 – C. W. HILL SCHOOL

	4th Grade		5th Grade		6th Grade		7th Grade	
	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level
Reading	2.06	2.6	2.77	3.6	2.44	3.7	2.01	3.7
Language	2.16	2.7	3.05	3.9	2.75	4.7	2.50	4.7
Word Knowledge	1.92	2.6	2.41	3.2	2.29	3.5	2.38	4.0
Arithmetic Computation	1.90	3.3	2.15	4.2	2.0	4.9	2.79	5.5

FINAL INSTRUCTIONAL SYSTEM DEVELOPMENT PLAN

Figure 14



INDIVIDUALIZED INSTRUCTIONAL PLAN

Figure 15

NAME: **TEACHER:**

Major—Category:

Sub—Category:
Level A

OBJECTIVE:

RELATED CONTENT (References):

MEDIA:

Instructional Objective Achieved:

☐ No Date(s) _____ _____ _____

☐ Yes Date _____

J. M. Jones

According to 1960 census figures 57.1 per cent of the children enrolled in Jessie Mae Jones School came from families whose annual income amounted to less than $3,000. The city-wide testing conducted by the Atlanta School System in the spring of '70 revealed the statistics shown in Table 2. MUST will be working with 70 children at J. M. Jones School.

TABLE 2
METROPOLITAN ACHIEVEMENT TESTS
ELEMENTARY BATTERY, FORM C
GRADES 4, 5, 6 AND 7 – J. M. JONES SCHOOL

	4th Grade		5th Grade		6th Grade		7th Grade	
	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level
Reading	2.67	3.0	3.50	4.3	2.44	3.6	2.46	4.1
Language	2.59	3.0	4.38	5.0	3.15	5.0	2.86	5.0
Word Knowledge	2.40	3.0	3.16	3.9	2.83	4.1	2.84	4.7
Arithmetic Computation	2.77	3.7	2.54	4.3	2.15	4.9	2.72	5.8

L. P. Miles

According to 1960 census figures 15.8 per cent of the children enrolled in L. P. Miles School came from families whose annual income amounted to less than $3,000. The city-wide testing conducted by the Atlanta School System in the spring of '70 revealed the statistics shown in Table 3. MUST will be working with 70 children at L. P. Miles.

TABLE 3
METROPOLITAN ACHIEVEMENT TESTS
ELEMENTARY BATTERY, FORM C
GRADES 4, 5, 6 AND 7 – L. P. MILES SCHOOL

	4th Grade		5th Grade		6th Grade		7th Grade	
	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level	Mean Stanine	Median Grade Level
Reading	3.94	3.7	2.88	4.4	3.62	4.8	3.29	5.0
Language	4.33	4.5	4.72	5.4	3.75	5.3	3.78	5.8
Word Knowledge	3.96	3.7	3.79	4.4	3.65	5.2	2.81	5.7
Arithmetic Computation	4.39	4.4	4.32	5.1	4.09	5.9	3.88	6.3

SUPPORTIVE TEACHERS — L. P. MILES

Mrs. G. Fowler	- 1st grade	Mrs. Pullins	- 4th grade
Mrs. Cook	- 1st grade	Mrs. Kries	- 4th grade
Mrs. Anderson	- 1st grade	Mrs. Bryant	- 4th grade
Mrs. Gramlin	- 2nd grade	Mrs. Phillip	- 4th grade
Mrs. Clark	- 2nd grade	Mr. Stanford	- 5th grade
Mrs. Davis	- 2nd grade	Mrs. Knowles	- 6th grade
Mrs. Jackson	- 3rd grade	Mrs. Blackburn	- 7th grade
Mrs. McDaniel	- 3rd grade	Rev. Sanders	- 7th grade
Mrs. Burns	- 3rd grade	Mr. Hamilton	- 7th grade
Mrs. Delaney	- 3rd grade	Mr. Galloway	- 7th grade
		Mrs. Gay	- 7th grade

SUPPORTIVE TEACHERS — C. W. HILL

N. Parker	- 2nd grade	A. R. Griggs	- 5th grade
Mrs. Hood	- 2nd grade	Mrs. Foster	- 5th grade
Mrs. Church	- 2nd grade	Mrs. Long	- 5th grade
J. Bostic	- 3rd grade	Mrs. Albert	- Speech
Mrs. Anthony	- 3rd grade	Mrs. Singlenton	- Music
Mrs. Feldman	- 3rd grade	Mrs. Jacob	- P. E.
I. Shepphard	- 4th grade	Mr. Belser	- P. E.
Mrs. Nutt	- 4th grade	Mrs. Johnson	- Library
Mrs. Crosswy	- 4th grade		

SUPPORTIVE TEACHERS — J. M. JONES

Mrs. Sanford	- Ist grade	Mrs. Miller	- 5th grade
Mrs. Matthews	- 2nd grade	Mrs. Chapman	- 5th grade
Mrs. Alexander	- 3rd grade & 4th grade	Mrs. Head	- 6th grade
Mrs. Hector	- 4th grade	Mrs. Jones	- 7th grade

B. **Summary of Data Analyses** *

1. The mean IQ scores for the MUST pupils tested with the Wechsler Intelligence Scale for Children jumped 5.43 points between pre and post-test administration. The post-test mean IQ was 80.74 which is no longer in the range usually classified as EMR.

2. The MUST children made statistically significant gains on the total Basic Skills Test and the following subtests of the Basic Skills Test.
    a. Color Naming (non-verbal)
    b. Color Naming (verbal)
    c. Shape Naming (non-verbal)
    d. Shape Naming (verbal)
    e. Number identification
    f. Number Concepts
    g. Letter Identification

3. The children receiving MUST experiences made significant gains on the Following Directions Test.

4. The MUST children made statistically significant gains on the total Houghton-Mifflin Pre-Reading Inventory and the following subtests of the Houghton-Mifflin:
    a. Finding Letters
    b. Listening for Letter Sounds
    c. Matching Letters and Sounds

    Significance was not obtained for the Using Context subtest.

5. The children receiving MUST experiences made significant gains on the Dolch Sight Vocabulary Lists.

6. The MUST children made statistically significant gains on the total Allyn-Bacon Diagnostic Test and the following subtests of the Allyn-Bacon:
    a. Visual-auditory perception of the initial conconant blends and digraphs.
    b. Visual-auditory perception of shrt vowel sounds.
    c. Visual-auditory perception of initial consonant substitution
    d. Ability to use substitution of initial consonants or of final consonants as a word attach skill.
    e. Word recognition and comprehension of oral and silent reading passages.

* See Appendix for supporting data.

7. The Stanford Diagnostic Test was also administered and significant gains were made on the total test and the following subtests.
    a. Reading Comprehension
    b. Vocabulary
    c. Beginning and ending sounds
    d. Blending

    Significant gains were not found on the subtests of auditory discrimination, syllabication, and sound discrimination.

8. The MUST children displayed positive increases in the following categories (statistically significant increase are starred).
    *a. is able to concentrate on things
    b. is alert in class
    c. is popular with classmates
    *d. finishes his classroom assignments
    e. works well by himself

9. The MUST children made statistically significant gains of the Metropolitan Achievement Test - Primary 1 in the following areas:
    a. Word Knowledge
    b. Word Analysis
    c. Total Reading
    d. Mathematical Concepts

    Significant results were not obtained on the Reading Comprehension subtests.

C. Profile of a Pupil Participant

W. S. lives with his parents, two brothers and one sister. Prior to enrollment in the pilot school, he was enrolled in a first grade class in Jackson, Mississippi two and a half years. His records indicated that his teachers considered him a failure. Because of his father's insistence, he was placed in the first grade in the pilot school. His father expressed the belief that "W.S. will not learn in school, because I had trouble learning in school."

W.S. was referred by the first grade teacher for a psychological evaluation because of his "complete lack of academic progress, severe motor problems, and inability to verbalize well." Based on the psychometrist's report and teachers referrals, W. S. was scheduled to the resource room. In the resource room, he was extremely withdrawn, shy, hyperactive, distratible, and listless. He attempted to "turn off" any efforts to engage him in academic activities. He was interested in manual activities, such as games and manipulative objects or devices.

He entered the project possessing extremely weak communication skills. The administration of the pre-test to him was impossible because of his difficulty in verbalizing. However, after two years involvement in the resource room, W. S. can perform the following tasks:

1. Work independently using the audio-flashcard reader, cassette recorder, filmstrip previewer, carousel projector or visual-maker.

2. Recognize and name the letters of the alphabet.

3. Label animals, places and things orally.

4. Identify by name the basic colors.

5. Identify by names the following geometric forms: circle, triangle, square, star, diamond, cross, retangle, and heart.

6. Identify like symbols, letters or words.

7. Recognize and name gross sounds made while his eyes are closed.

8. Recognize and repeat the two words that rhyme in a group of three words.

9. Can demonstrate understanding of sequential order and left-to-right sequence in reading pictures, words, phrases and sentences.

10. Recognize by name the numerals 1-20.

11. Recognize and write his name legibly.

12. Recognize in isolation or sentences the Sets A and B of Dolch Vocabulary 22 of the 24 words in Sets C, D, E and 18 of the 24 words in Set F.

13. Use the initial consonant sound and context clues as aids in attacking unknown words.

14. Read fluently and distinctly any of the beginning Dolch Readers.

In addition, W. S. has shown tremendous progress in his peer-teacher interaction. He expresses himself freely. The length of his statements have increased from one word to lengthy sentences. He is motivated by his successful experiences in the resource room to the point that he vies with his peers in completing a task. Being successful in his tasks, has improved his self concept. He frequently boasts that he has mastered a particular skill, or he has read a "whole" book, or "I know all my words."

D. Summary of 1971-72 Activities:

The activities of the 1971-72 school year revolved around the concept of the individualized instruction plan - its development, implementation and evaluation. Preceding and accompanying the actual development of the plan was a series of critique and review

efforts concerning referral methods, diagnostic instruments, current curriculum materials and available media. As a part of the development of the overall plan, simulation and group activities in preparing individualized instruction plans were conducted.

The actual development of the comprehensive individual instructional plans focused on participating children and utilized diagnostic results and appropriate media and materials. From this development, the individualized Instruction Plan concept was implemented in resource room situation. These implementation efforts were carefully and continually evaluated, revised, and retried. Accompanying the development, implementation, and evaluation activities were a series of dissemination efforts including the following: (1) conference presentations, (2) GAMES and materials handbook, (3) Sets of Instructional Plans, (4) Production Center (C. W. Hill), and (5) Slide-tape presentation.

V. Project Resumé

The foregoing comprehensive report as well as observations of the project in operation for three years support the following conclusion. The project:

1. Pragmatically set forth a charted plan to use instructional media as a prime requisite for instruction.

2. Demonstrated a scheme whereby an elementary school, given appropriate staff, can organize for individual instruction.

3. Demonstrated the value of the resource room approach.

4. Through the resource model, created an image of school as an exciting and enjoyable place to be (many students not involved in the MUST project wanted to join the MUST students in the resource room).

5. Planned and conducted effective in-service training of classroom teachers in (a) techniques for individualizing instruction, (b) their roles as members of a differentiated staff team, and (c) development of competencies in utilization of media.

6. Reaffirmed the importance of training and involvement on the part of instructional staff concerned with educational change.

7. Demonstrated the value of paraprofessionals.

8. Assisted four of the six teacher aides in their desire to pursue newly considered teaching careers.

9. Set-up a media center equipped with inexpensive production materials that permitted more efficient use of a teacher's time.

10. Showed that teacher-made materials, appropriate to learner needs, proved to be at least or meaningful than more generalized sophisticated commercially prepared materials.

11. Assisted pilot school principals in
    a. Reorganizing their schools for instructional improvement.
    b. Initiating media resource facilities.
    c. Creating favorable feelings for incorporating media in the instructional program.
    d. Obtaining security against theft.
    e. Providing a model that proved effective in bringing non-project teachers in the school to a realization of the value inherent in individualized instruction.

12. Helped in the identification of the nature of administrative and operational problems that can arise from the initiation of special programs in schools.

13. As a result of recorded discussion between staff and parents, showed the value of informing parents about programs designed to help their children.

14. Compiled significant quantities of innovative individualized instruction plans, instructional games, and other materials.

15. Demonstrated its success to the point where leadership in the school system made definite plans to extend the program over the entire system within the regular school budget.

While these positive conclusions are overwhelming successes, they must be viewed within a perspective of the attempts that were not so successful. The project did not:

1. Because of time constraints, provide in-classroom assistance to regular teachers and students by the resource room teacher.

2. Counter the difficult problems attending high-rate of student mobility from school-to-school.

3. Because of time constraints, develop a truly comprehensive sequence of instructional objectives, individualized plans and appropriate media.

4. Follow individual student progress for a long enough period of time to ascertain how much of the gain ascribed to the project would be lost, if the setting changed. For example, the student transferred to another school..

5. Because of a decision made early in the project (that is, to focus upon criterion reference tests that measure a student's improvements against his prior proficiency), demonstrate statistically valid significant difference between control an experimental groups of students.

6. Because of time constraints, examine the entire range of audiovisual equipment and software.

7. Because selection of media was often one of voluntary choice on the part of the student, determine the most effective medium for a particular learning task.

The most outstanding conclusion is the legacy or final result of the project. The model developed will, when implemented fully over the Atlanta School System, place many students formerly identified as educable mentally retarded back in the main stream of education, and by so doing turn their failures into successes.

APPENDIX A

QUALIFICATIONS AND DUTIES OF TEAM MEMBERS

Qualifications and Duties of Team Members

1. Position: Instructor-Coordinator of Media Utilization Team

Educational Requirements:

Preferred:	Doctorate or Sixth-Year Certificate (Ed.S).
Required:	Master's Degree in Education including courses in Special Education.
Salary Range:	Master's Degree, $9,236.50 - $13,055.70 Sixth-Year Certificate, $10,873.30 - $ 13,874.10 Doctorate, $12,237.30 - $14,692.50
Experience:	Minimum of ten years or the equivalent in education, in teaching, supervision, curriculum development, special education, administration or pupil personnel services (psychological)
Duties:	Plans, organizes and coordinates the activities of the project under the direction of the Director of the Instructional Resource Center, and collaborates with the research associate in the research and evaluation activities. The coordinator also assumes a major responsibility for collaborating with the in-system consultants and participating staffs, and media utilization training activities.

2. Position: Media Utilization Specialist

Educational Requirements:

Preferred:	Sixth-Year Certificate in Education including Special Education courses and vocational training.
Required:	Master's Degree in Education including Special Education courses.
Salary Range:	Master's Degree, $8,103.47 - $12,212.00 Six-Year Certificate, $9,864.27 - $13,092.40 Doctorate, $11,331.60 - $13,972.80
Experience:	Minimum of five years or the equivalent in education; in teaching, supervision, curriculum development, special education, shop work, art, crafts, or pupil personnel services (psychological).
Duties:	Assumes a major responsibility for working with the media utilization aides and resource personnel to identify needs for media, design media, guide the use of media and assists in training activities.

Experience: Minimum of one year of successful experience

Duties: Serves as office receptionist and assumes general clerical duties.

6. Position: Electrician Technician

Educational Requirements:

Preferred: College Degree plus vocational training

Required: College Degree

Salary Range: $6,480 - $8,316

Experience: Minimum of three years of successful experience as a teacher or practitioner in the field of electronics.

Duties: Assumes the major responsibility for operating and maintaining electrical equipment used in the Media Utilization project and assist with the teaching activities related to electrical equipment.

7. Position: Graphics Artist

Educational Requirements:

Preferred: College Degree plus vocational training

Required: College Degree

Salary Range: $6,216 - $7,980

Experience: Minimum of three years of successful experience as a teacher or practitioner in the field of arts.

Duties: Assumes the major responsibility for designing, developing and producing media involving the graphic arts, and assisting with all publications requiring graphic art skills.

8. Position: Photography Technician

Educational Requirements:

Preferred: College Degree and vocational training

Required: College Degree

Salary Range: $7,044 - $9,048

Experience: Minimum of three years of successful experience as a teacher or practitioner in the field of photography.

3. Position: Community Resources Specialist

Educational Requirements:

Preferred:	Sixth-Year Certificate
Required:	Master's Degree
Salary Range:	Master's Degree, $8,013.47 - $12,212.00 Sixth-Year Certificate, $9,864.27 - $13,092.40 Doctorate, $11,331.60 - $13,972.80
Experience:	Minimum of five years or the equivalence in education; in teaching, supervision, curriculum development, special education, pupil personnel services, community school programs or special projects (Parent Child Center, Follow Through, Head Start, or Central Cities).
Duties:	Assumes a major responsibility for: (1) identifying existing successful practices in the utilization of instructional media and disseminating this information, and (2) identifying new resources including people (paraprofessionals and volunteers), places, and community sciences.

4. Position: Publications Aide

Educational Requirements:

Preferred:	Clerical training and a degree in Education or Journalism.
Required:	A.B. Degree
Salary Range:	A.B. Degree, $7,336.67 - $10,744.67 Master's Degree, $8,103.47 - $12,212.00 Sixth-Year Certificate, $9,864.27 - $13,092.40
Experience:	Minimum of three years of experience in education; teaching English, teaching secretarial studies; or publishing.
Duties:	Assumes a major responsibility for editing, making layouts, etc., to expedite publication of printed materials and reports.

5. Position: Secretary

Educational Requirements:

Preferred:	Some college
Required:	High School Diploma, clerical training
Salary Range:	$4,260 - $5,484

Duties: Serves as an aide to teachers in identifying needs for media designing, selecting, developing, and guiding the use of media.

12. Position: Substitute Teacher

Educational Requirements:

Preferred: Four-Year Certificate

Required: A.B. Degree with a Provisional Certificate

Salary: $18.00 per day

Experience: None is required

Duties: Substitute teachers will replace regular classroom teachers in the five project demonstration schools so that they may attend workshop sessions which are scheduled during the school day.

13. Position: Research Associate

Educational Requirements:

Preferred: Doctorate in Educational Research

Required: Sixth-Year Certificate in Educational Research or subject area.

Salary Range: Master's Degree, $14,542.20 - $16,179.00
Sixth-Year Certificate, $15,360.60 - $16.997.40
Doctorate, $16,179.00 - $17,815.80

Experience: Minimum of five years or the equivalent in education in teaching, supervision, curriculum development, and educational research.

Duties: The research associate will work under the supervision of the Assistant Superintendent for Research and Development. He will be responsible for perfecting and executing detailed plans for the research and evaluation of all activities of this project. Moreover, at appropriate intervals during the project, it will be his responsibility to provide feedback to project personnel, which will enable them to make improvements promptly. He will also be responsible for reporting on the research and evaluation of the project. (See attached Evaluation Check List, FY 1969).

14. Position: Statistician (Half-time)

Educational Requirements:

Preferred: College Degree

Duties: Assumes the major responsibility for the photography involved in the Media Utilization project, maintains the photographic equipment, and assists with the teaching activities related to photography.

9. Position: Crafts Specialists

Educational Requirements:

Preferred: College Degree and vocational training

Required: College Degree

Salary Range: $6,216 - $7,980

Experience: Minimum of three years of successful experience as a teacher or practitioner in the field of crafts.

Duties: Assumes the major responsibility for designing, developing and producing media involving craft skills, maintaining craft equipment, and assisting with the teaching activities related to crafts.

10. Position: Cost-account Clerk

Educational Requirements:

Preferred: Some college and training in bookkeeping

Required: High School Diploma and training in bookkeeping

Salary Range: $4,260 - $5,484

Experience: Minimum of one year of experience which involved bookkeeping and/or cost-accounting activities.

Duties: Keeps records for project staff and prepares cost estimates for producing (individual objects and/or quantities).

11. Position: Media Utilization Assistant

Educational Requirements:

Preferred: Master's Degree

Required: A.B. Degree in Education including courses in Special Education.

Salary Range: A.B. Degree, $7,336.67 - $10,744.67
Master's Degree, $8,103.47 - $12,212.00
Sixth-Year Certificate, $9,864.27 - $13,092.40

Experience: Minimum of three years or the equivalent in education; in teaching, special education, shop work, art, crafts, or pupil personnel services (psychologist).

Required:	Some college training including at least one course in statistics.
Salary Range:	$6,480 - $8,316
Experience:	Minimum of three years of experience with at least part of this time in statistical work.
Duties:	Assists the research associate in keeping all statistical records, developing reports, preparing data for processing and performing statistical treatments with data by using a desk calculator.

15. Position: Secretary

Educational Requirements:

Preferred:	Some College
Required:	High School Diploma plus clerical training
Salary Range:	$4,632 - $5,964
Experience:	Minimum of three years of successful experience
Duties:	Assumes general clerical duties and expedites production of reports.

3. Position: Community Resources Specialist

Educational Requirements:

Preferred:	Sixth-Year Certificate
Required:	Master's Degree
Salary Range:	Master's Degree, $8,013.47 - $12,212.00 Sixth-Year Certificate, $9,864.27 - $13,092.40 Doctorate, $11,331.60 - $13,972.80
Experience:	Minimum of five years or the equivalence in education; in teaching, supervision, curriculum development, special education, pupil personnel services, community school programs or special projects (Parent Child Center, Follow Through, Head Start, or Central Cities).
Duties:	Assumes a major responsibility for: (1) identifying existing successful practices in the utilization of instructional media and disseminating this information, and (2) identifying new resources including people (paraprofessionals and volunteers), places, and community sciences.

4. Position: Publications Aide

Educational Requirements:

Preferred:	Clerical training and a degree in Education or Journalism.
Required:	A.B. Degree
Salary Range:	A.B. Degree, $7,336.67 - $10,744.67 Master's Degree, $8,103.47 - $12,212.00 Sixth-Year Certificate, $9,864.27 - $13,092.40
Experience:	Minimum of three years of experience in education; teaching English, teaching secretarial studies; or publishing.
Duties:	Assumes a major responsibility for editing, making layouts, etc., to expedite publication of printed materials and reports.

5. Position: Secretary

Educational Requirements:

Preferred:	Some college
Required:	High School Diploma, clerical training
Salary Range:	$4,260 - $5,484

APPENDIX B

MUST WORKSHOP - JANUARY, 1972

ATLANTA PUBLIC SCHOOLS

INSTRUCTIONAL SERVICES CENTER 2930 FORREST HILL DRIVE, S.W. ATLANTA, GEORGIA 30315

OFFICE OF
ASSISTANT SUPERINTENDENT
FOR INSTRUCTION

January 3, 1972

MEMORANDUM

TO: Mr. Milton White
Mr. Felix Mattox
Mrs. Anne Fannin

FROM: Elise Gilham E.G.

RE: Proposed One Day Workshop

During the Summer Workshop, 1971, behavioral objectives were developed based on the educational needs evidenced in prior testing of pupil participants during the 1970-71 school year. The media and mediaware that would fulfill the needs and requirements of the objectives have been added. At this point, we feel that an additional one day's workshop would increase the effectiveness of the work accomplished during the summer training. On the day of the workshop the resource room teachers would demonstrate successful ideas for media application; share problems encountered in media application; and plan and develop additional mediated units of instruction.

We need your assistance in providing release time for the resource room teachers. Since each resource room teacher serves a maximum of twelve pupils, the resource room teacher would be able to plan for the aide to function in her absence. January 13, 1972 is the proposed date for the workshop. A copy of the procedure for the day is enclosed.

We will contact you to get your reaction to the plan for the workshop.

EG:jb
Enclosure

Approved: _____
Dr. Gil Tauffner, Director MUST Project

CC: Dr. Ruel Morrison
Mr. J. Paul Todd
Dr. H. Mark Huie
Mr. Cecil Thornton

ATLANTA PUBLIC SCHOOLS

INSTRUCTIONAL SERVICES CENTER 2930 FORREST HILL DRIVE, S.W. ATLANTA, GEORGIA 30315

OFFICE OF
ASSISTANT SUPERINTENDENT
FOR INSTRUCTION

January 4, 1972

MEMORANDUM

TO: Mrs. Basaline Hewitt
Mrs. Ann Owens
Mrs. Ossie Thomas
Mrs. Eunice Thompson
Mrs. Marie Craig
Mrs. Frances Wright

FROM: Elise Gilham E. G.

We have planned, with your principal's permission, a workshop to be held January 13, 1972 from 8:15a.m. – 3:15p.m. at the Instructional Services Center. The content of the workshop will necessitate each of you sending to me by January 6, 1972 the following:

(1) One pupil's folder with an individualized instruction plan and accompaning teaching strategy that was successfully executed
(2) One pupil's folder with an individualized instruction plan in which a problem was encountered
(3) A list of skills that need to be stated as behavioral objectives and developed into mediated units of instruction

The proposed agenda for the Workshop follows:

8:15 – 9:15	ESP (Exhange Successful Practices)
9:15 – 11:15	BRAINSTORM PROBLEMS
11:15 – 12:15	LUNCH
12:15 – 1:15	GROUP ACTIVITY (Plan and develop a mediated unit of instruction)
1:15 – 3:15	INDIVIDUAL ACTIVITY (Develop mediated units of instruction)

EG:jb

Approved: Gil Tauffner
Dr. Gil Tauffner, Director MUST Project

RESOURCE ROOM TEACHER WORKSHOP

JANUARY 13, 1972

PROPOSED AGENDA	MEETING RESULTS
I. Exchange of successful practices by six resource room teachers.	Each teacher presented a successful individualized instructional sequence plan and answered group questions regarding the methods employed.
II. Brainstorm problems:	
a. Implementation of individualized instruction plans	Each teacher presented one unsuccessful individualized instruction plan. An examination of the six unsuccessful individualized instruction plans revealed the need to use the smallest segment of the task as a beginning point and/or the exclusion of strategies that were not directly related to the objective.
b. Scheduling	The major problem was scheduling time for observation in the regular classroom by the resource room teacher and in the resource room by the regular classroom teacher and follow-up communication.
c. Excessive pupil absences.	Group agreed to check attendance daily and discuss problems with regular classroom teacher, principal and visiting counselor.
d. Parental Involvement	Group reaffirmation of the need to promote parental involvement. Suggestion that a non-working mother be identified to act as a liaison between school and parents. Therefore, a list of names of mothers who do not work should be solicited and one of the parents would be approached to conduct the meetings in her home.
e. Academic Freedom - Relationship to MUST Objectives	Purpose and function of resource room and goals for optimal operations were reviewed.

f. Report Forms	Individual sequence time sheets were reported as being too time consuming. The ensuing discussion, however, pointed out the merits and purpose of the time analysis to the satisfaction of the resource room teachers.
g. Interaction with supportive teachers and faculty members	It was suggested that time provisions should be made for observation of a child in his regular classroom. Similarly, the regular classroom teacher should be given the opportunity to observe a child's activities in the resource room. Resource room teachers reported good back-up from other faculty members but stressed that this support and integration must be reinforced and strengthened.
III. Group Activity	This will be included in the final report
a. Select a skill to state in the form of a behavioral objective	
b. Select appropriate media for the objective	
c. Specify instructional strategy	
IV. Individual Activity	
Follow procedure outlined in group activity above on an individualized basis	Time limitations necessitated the tabling of this area until the next workshop.

APPENDIX C

MUST WORKSHOP - JUNE, 1971

Schedule for June 21 – July 2, 1971

June 21, 1971

8:30 – 9:00	Registration Reading Pre-Test for participants.
9:00 – 12:00	Formal presentation of the Houghton Mifflin Reading Program – Houghton Mifflin Company.
12:00 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading program presented.

June 22, 1971

8:30 – 11:30	Formal presentation of the Harper and Row Reading Program – Harper and Row, Publishers.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 23, 1971

8:30 – 11:30	Formal presentation of the Scott, Foresman Reading Systems Series – Scott, Foresman and Company.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 24, 1971

8:30 – 11:30	Sullivan Associates Reading Program McGraw-Hill Book Company, Webster Division.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 25, 1971

8:30 – 11:30	Formal presentation of "DAD" (Direct Approach to Reading) Program.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 28, 1971

8:30 – 11:30	Formal presentation of the Ginn Reading 360 Series, Ginn and Company.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 29, 1971

8:30 – 11:30	Formal presentation of the Macmillan Reading Program, The Macmillan Company.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

June 30, 1971

8:30 – 11:30	Formal presentation of Sheldon Basic Reading Series Centennial Edition – Allyn and Bacon, Inc.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

July 1, 1971

8:30 – 11:30	Formal presentation of the SRA Reading Program – Basic Reading Series – Sciences Research Associates.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.

July 2, 1971

8:30 – 11:30	Functional Basic Reading Series Stanwix House, Inc.
11:30 – 12:30	Discussion and activities to demonstrate content familiarity and instructional utilization of the reading programs presented.
12:30 –	Lunch will be compliments of Stanwix House. Please call Judy Bohannon at 761-5411, Ext. 327 by June 25 to make your reservation.

DIRECTIONS: Circle the correct response.

As you take the test, you will find that you must choose from three or four responses to answer each question. Only one response can be the correct answer. The other responses will be incorrect or your indication that you don't know. If the papers contain a lot of incorrect answers, we'll be surprised, because that would mean you did a lot of guessing.

Questions relating directly to a specific reading program are based on the latest edition of reading programs used in Atlanta Public Schools.

A program which provides specific texts which are devoted to the development of reading in the basic subject areas is:

a. Harper & Row Basic Reading Program
b. Ginn Reading 360 Series
c. Scott-Foresman Reading System
d. don't know

The process of unlocking, analyzing, or solving a written word is called:

a. decoding
b. encoding
c. neither a or b
d. don't know

When presented with a picture of a hat and asked to fill in the missing letter of the trigram "_at", the pupil is being asked to:

a. decode
b. encode
c. neither a or b
d. don't know

Phoneme-grapheme correspondences is another way to say sound-symbol relationships.

a. True
b. False
c. don't know

The program which has chosen to use the rebus as a self-help device at the pre-primer level is the:

a. Harper-Row Basic Reading Program
b. Scott-Foresman Reading Systems
c. Houghton-Mifflin Reading Program
d. don't know

An example of a "spelling regularity" program, one which selects the initial reading vocabulary words primarily on the basis of the regularity of their letter-sound correspondences is the:

a. SRA Basic Reading Program
b. Ginn Reading 360 Series
c. Harper & Row Basic Reading Program

The label words used at the pre-primer level of the Harper & Row Basic Reading Program are part of the basic reading vocabulary.

a. True
b. False
c. Don't know

Which of the following programs is a sound-to-letter approach to decoding rather than the letter-to-sound approach?

a. MacMillan Reading Program
b. Ginn Reading 360 Series
c. Sheldon Basic Reading Program
d. don't know

Harper & Row Basic Reading Program uses rhyming words initially to prepare the pupil for the consonant substitution techniques to be used at a later time.

a. True
b. False
c. don't know

An example of a "meaning frequency" program, one which selects the initial reading vocabulary words primarily because they are the commonest in the English language and are probably part of the child's meaning and speaking vocabulary, is the:

a. MacMillan Reading Program
b. Sullivan Programmed Reading Series
c. SRA Reading Program
d. don't know

Which of the following programs would tend to have the least number of irregularly spelled words in the initial reading vocabulary?

a. Ginn Reading 360 Series
b. Sullivan Programmed Reading Series
c. Scott-Foresman Reading Systems
d. don't know

The approach to learning letter-sound relationships that teachs these relationships by breaking down known sight words into parts is known as the:

a. analytic approach
b. synthetic approach
c. don't know

The approach to learning letter-sound relationships that teachs these relationships first and then directs the learner to combine these to form words in known as the

a. analytic approach
b. synthetic approach
c. don't know

The analytic approach to learning letter-sound relationships is emphasized in the initial stages of the:

a. SRA Basic Reading Program
b. Sheldon Basic Reading Series
c. neither a or b
d. don't know

The synthetic approach to learning letter-sound relationships is emphasized in the initial stages of the:

a. Harper & Row Basic Reading Program
b. Sullivan Programmed Reading Series
c. Sheldon Basic Reading Series
d. don't know

Which one of the following new reading programs uses the term core components and additional components to describe its teaching strategy?

a. Scott-Foresman Reading Systems
b. Ginn Reading 360 Series
c. Houghton Mifflin Reading Program
d. don't know

Which reading program would be the least likely to have exercises in distinguishing likenesses and differences in geometric forms in the readiness book that immediately preceeds the first pre-primer?

a. Sheldon Basic Reading Series
b. Houghton-Mifflin Reading Program
c. SRA Basic Reading Program
d. don't know

Which reading program is considered "global" in its approach to reading readiness?

a. Sheldon Basic Reading Series
b. SRA Basic Reading Program
c. MacMillan Reading Program

Which reading program is considered the more "specific" in its approach to reading readiness?

a. MacMillan Reading Program
b. Sheldon Basic Reading Program
c. Houghton-Mifflin Reading Program
d. don't know

A program which begins the process of decoding by using words with one syllable containing C-V-C patterns is the:

a. SRA Basic Reading Program
b. Scott-Foresman Reading Systems
c. Houghton-Mifflin Reading Program
d. don't know

The Scott-Foresman Reading System does not introduce the short "a" vowel sound in the first grade.

a. True
b. False
c. don't know

Which program is least likely to rely on vowel sounds for word analysis?

a. Houghton-Mifflin Reading Program
b. SRA Basic Reading Program
c. Sullivan Programmed Reading Series
d. don't know

The Sullivan Programmed Reading Series approach to learning sound-letter relationships has more in common with the SRA Basic REading Program than it does with the Harper & Row Basic Reading Program.

a. True
b. False
c. don't know

The Teacher's Read Alound Library, Take-Home Books, and Prepared Letters to Parents, are all components of the:

a. Ginn Reading Series 360
b. MacMillan Reading Program
c. Scott-Foresman Reading Systems
d. don't know

Which program stresses natural language to the extent that contractions are used in the first pre-primer?

a. MacMillan Reading Program
b. SRA Basic Reading Program
c. Both a & b
d. don't know

Two programs which have chosen to use level designations rather than grade designations are:

a. Ginn Reading 360 Series and Harper & Row Basic Reading Program
b. Sheldon Basic Reading Series, and Ginn Reading 360 Series
c. Scott-Foresman Reading Systems and Houghton-Mifflin Reading Program
d. don't know

The SRA Basic Reading Program requires that:

a. pupils learn rules for decoding
b. pupils practice reading repetitive words and their sound-letter relationships until they learn the relationships inductively.
c. Pupils use both a & b
d. don't know

In the Harper & Row Basic Reading Program, if the pupil encounters an underlined word in the pre-primers which he cannot read, he knows that he is supposed to:

a. sound it out letter by letter
b. look the word up in a picture dictionary
c. ask the teacher to pronounce the word for him
d. don't know

A program which categorizes materials so that recommendations can be made for orienting the teaching of reading through different modalities is:

a. MacMillan Reading Program
b. Scott-Foresman Reading Systems
c. Ginn Reading 360 Series
d. don't know

Which program is most likely to teach new words as whole words in the earliest stages of learning to read.

a. Harper & Row Basic Reading Program
b. Sullivan Programmed Reading Series
c. SRA Basic Reading Program
d. don't know

The decoding strategy that consists of using together (1) the context, and (2) the sounds represented by the consonants moving in a left-to-right order through the word, is the primary word identification technique used by:

a. Houghton-Mifflin Reading Program
b. Sullivan Programmed Reading Series
c. both a & b
d. don't know

Which program does rely on illustrations to serve as cues for word recognition and comprehension?

a. Sullivan Programmed Reading
b. SRA Basic Reading Program
c. both a & b
d. don't know

Which program has the higher concentration on practice of individual grapheme-phoneme correspondences?

a. Sheldon Basic Reading Series
b. Sullivan Programmed REading Series
c. MacMillan Reading Program
d. don't know

Which program would be more likely to concentrate on language development in the readiness book that immediately preceeds the first pre-primer?

a. MacMillan Reading Program
b. Houghton-Mifflin Reading Program
c. Ginn Reading 360 Series
d. don't know

Which program teachs the identification of fifteen high frequency words prior to the first pre-primer?

a. Houghton-Mifflin Reading Program
b. Sheldon Basic Reading Program
c. both a & b
d. don't know

CONSULTANT'S REPORT
1971 MUST WORKSHOP

Ellis Richardson

REVIEW OF READING PROGRAMS: The presentations of reading programs by consultant's to the various publishers turned out to be an excellent workshop method for: 1) acquainting participants with currently available methods and materials, 2) exposing participants to the variety of positions and theories associated with primary reading curricula, and 3) providing participants with basic concepts and vocabulary for discussion and the formulation of opinions concerning early reading training. The presentations were, generally, clear and surprisingly well geared to the level of the workshop participants.

Consultants were provided a behavioral statement (How children would be able to figure out a novel word in reading) to address with their method. Although this technique was probably responsible, in part, for the degree of clarity of the presentations, I felt that this technique could have been more fully exploited. Had consultants had several such statements to address, workshop participants would have had a more comprehensive basis for making cross comparisons. This feature should be more fully developed for future workshops.

TECHNIQUE FOR EVALUATING PRESENTATIONS: Probably the most outstanding feature of the MUST workshop was its use of the evaluation checklist for categorizing the various reading programs presented. The technique required that the workshop participants modify Chaull's previously developed checklist. This technique provided a motive and method for mastering the concepts necessary for evaluating methods and materials for reading instruction. The results of this evaluation (as well as the technique itself) are, in my opinion, publication worthy. The information concerning the particular reading programs reviewed is clearly reflected in the checklist results and is more than sufficient to justify national dessimination. Furthermore, the evaluative concepts developed in modifying Chaull's checklist are sufficiently sound and valuable to justify publication.

WORKSHOP PARTICIPANTS: Although I have not seen the results of the pre- and post-test evaluation of progress made by workshop participants, it was evident in the first three

weeks of the workshop that participants were gaining a great deal from listening to and discussing the various presentations. I observed a general increase in the level of sophistication of their discussions. Not only did their vocabulary develop, but also they began asking more meaningful questions and dealing with issues in a behavioral framework. Having provided consultation for the 1970 MUST Workshop and having worked with many of the participants both years, I should add that I observed a more general increase in the level of sophistication that must be due to the work of the MUST staff during the 1970-71 school year.

WORKSHOP EVALUATION

General Questionnaire for Participants

DIRECTIONS: An attempt has been made to develop a questionnaire to be used by participants in all workshops. This means that certain items will not apply to all workshops. When these items occur please mark the "Not Applicable" box and omit circling any other number.

Read each statement carefully and decide how you feel about it. You are offered four possible answers to each statement. Circle a single number following each statement.

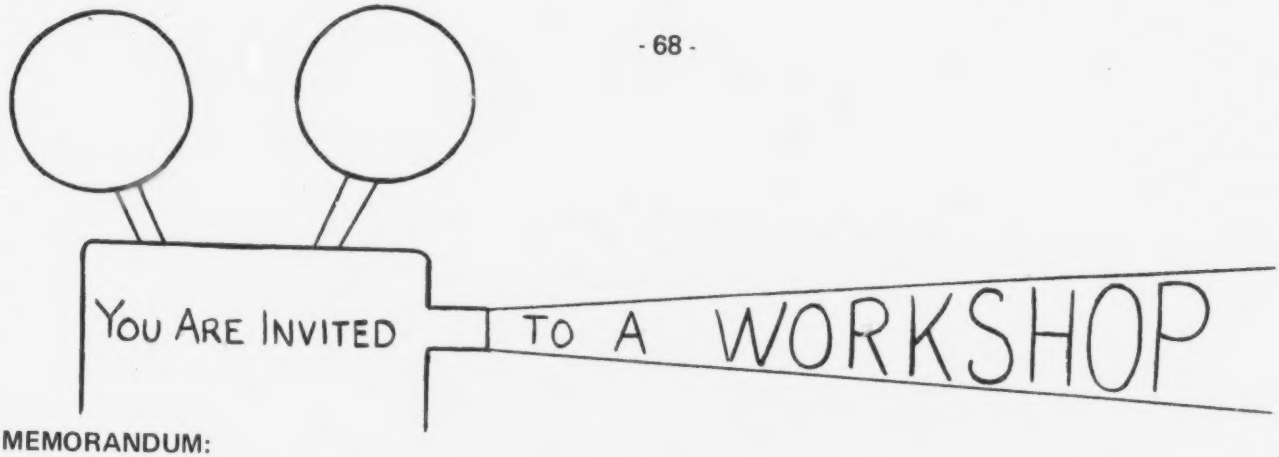
Name of Workshop you are attending _____

In regard to this workshop I feel that:	Strongly Agree	Agree	Dis-agree	Strongly Disagree	Not Applicable
1. The objectives of this workshop are clear to me	1	5			☐
2. The objectives of this workshop are not realistic			4	2	☐
3. Specific objectives make it difficult to work efficiently			5	1	☐
4. The participants accept the objectives of this workshop		5	1		☐
5. The objectives of this workshop are not the same as my objectives			6		☐
6. I am not learning anything that I did not already know			1	5	☐
7. The materials distributed will be valuable to me	5	1			☐
8. I could probably learn as much by reading			5	1	☐
9. Possible solutions to my problems are considered	2	3	1		☐
10. The information presented is too elementary			3	3	☐
11. The consultants seem to know their subjects		3	1		☐
12. The discussion leaders are not well prepared		1	4		☐
13. I am being stimulated to think critically about sources of professional help	1	3	1	1	☐
14. New acquaintances are being made which might help in future work . . .	2	4			☐
15. The participants did not work very well as a group	1	1	2	2	☐
16. Theory is seldom related to practice.			2	4	☐

In regard to this workshop I feel that:	Strongly Agree	Agree	Dis-agree	Strongly Disagree	Not Applicable
17. The sessions follow a logical pattern		3	3		☐
18. The schedule is too fixed			5	1	☐
19. The group discussions are excellent .		6			☐
20. There is very little time for informal conversation			5	1	☐
21. I have not had an opportunity to express my ideas			3	3	☐
22. I really feel a part of the group . .	2	4			☐
23. My time is being well spent		6			☐
24. The workshop is meeting my expectations		6			☐
25. Too much time is being devoted to trivial matters			6		☐
26. I have not had an opportunity to get reactions to my ideas			5	1	☐
27. Provisions are made for directing individualized study	1	4	1		☐
28. This workshop will contribute little to improving my teaching competencies			3	3	☐
29. The material presented will not help me much in my teaching during the first months				6	☐
30. A workshop of this nature should be offered again next year		6			☐
31. The information presented is too advanced			4	2	☐
32. The workshop was informative and well organized		6			☐
33. The workshop gave sharper insights into the schools -- their aims, curricula, functions and guidance . .	1	5			☐
34. The workshop was helpful in formulating a concept of teaching the inner city child	1	4		1	☐
35. The financial compensation was the best part of the workshop			5	1	☐

APPENDIX D

MUST WORKSHOP - JUNE, 1970



MEMORANDUM:

To:	School system staff involved with the MUST Project.*
From:	Gil Tauffner and Kay Earnhardt (Tauffner, K.E.)
Title of Workshop:	"A Systems Approach to Individualized Instruction"
Dates of Workshop:	June 15 - June 19 June 22 - June 26
Hours:	8:30 a.m. - 3:30 p.m.
Rate of Pay:	For full time participation each participant will receive his regular rate of pay.
Purpose:	To prepare the staff that will be involved in the MUST Project.

Tentative Outline of Activities:

Review of available programs: rationale, content, placement procedures, techniques, etc.

Development of structural relationships for use of: media and staff in library, resource room, and classroom.

Development of procedure for matching curriculum and media to needs and abilities in a specific sequence.

Exploration of possibilities of using behavior modification techniques.

Demonstration and practice in operation, general techniques, and intelligent use of equipment.

Interpretation and use of measurement instruments to be used in MUST Project.

* Special education teachers, librarians, classroom teachers, resource librarians and resource special education specialist for the five pilot schools.

GT/KE/bc

Approved: Curtis Henson

E. Curtis Henson
Assistant Superintendent
for Instruction

5/14/70

MUST Project Workshop Activities

Monday, June 15 8:30a.m. - 3:30p.m.

Registration

Activity: Individuals construct magazine picture montages as a means of introducing themselves to other participants.

Survey: What resources are currently available in your school for the instruction of Educable Mentally Retarded Pupils? Discussion of Survey.

Presentation: Overview of MUST Project: What additional resources can you expect as a result of the project?

Activity: Small groups use magnetic easel materials to construct a schematic indicating how MUST Project Pupils will be scheduled for resource room and library activities.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

School_____ Date_____

INVENTORY OF AVAILABLE RESOURCES IN

YOUR SCHOOL FOR MUST PROJECT PUPILS

I. Instructional Personnel

List each person in your school who will be directly involved in the instruction of the MUST Project pupils. Give a brief description of each person's role.

II. Space

List all available physical facilities where you anticipate instruction for the MUST Project pupils taking place:

III. Materials

A. List the materials in your school that you have found appropriate for teaching the Educable Mentally Retarded:

Reading

Math

B. Indicate materials you would like to have available for teaching the Educable Mentally Retarded:

IV. Equipment

A. List equipment in your school that you have found particularly helpful in teaching the Educable Mentally Retarded:

B. Indicate the accessibility of this equipment to you:

C. Indicate any equipment, not available to you, that you would consider basic to the instructional program:

V. Pupils

A. How many pupils do you anticipate having in each homeroom of the MUST Project team? _____

B. How many pupils from each homeroom will be scheduled for daily individualized instruction in the resource room? _____

C. How many pupils do you anticipate will be scheduled into the resource room at any one time? _____

D. How many pupils will the resource room teacher service during an average day? _____

E. How many MUST Project pupils could your library accomodate on an individualized basis at any one time? _____

MUST Project Workshop Activities

Tuesday, June 16 8:30a.m. - 3:30p.m.

Discussions: Diagnostic Test Battery --
Led by Dr. Glenn Vergason, Chairman
Special Education Department,
Georgia State University.

Relating Diagnosis to Prescriptive Teaching --- Led by Dorothy Whitney, MUST staff.

Evaluating the objectives of the MUST Project --- Led by Larry Orcutt, Research and Development.

Feedback on Activity Sheet #1.

Demonstration: Project Equipment to be on loan to schools for the duration of the project.

MUST PROJECT
Learning Resource Center
Atlanta Public Schools

MUST Project Workshop Activities

Wednesday, June 17

Demonstration: Developing Learning Readiness
Barbara Barnum. Consultant,
McGraw-Hill Publishing Company.

Discussions: Feedback on Individualized Activity
Sheet #1.

Demonstrations: The Laminating Process, Mike
Overcash, General Binding
Corporation.

Developing instructional materials
for programmable equipment.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

FEEDBACK: INDIVIDUALIZED ACTIVITY SHEET #1

The following list indicates some of the problems that are likely to arise in determining when pupils are to receive instruction in the resource room and library:

1. Physical education instruction
2. Lunchroom schedule
3. Special music instruction
4. Educational radio and television schedule
5. Pupils from a departmentalized situation
6. Special art instruction
7. Regularly scheduled classes in the library
8. Minimum amount of equipment for scheduling
9. Degree of maturity of students moving through the school unattended
10. Milk breaks
11. Assigning more pupils than can be adequately handled.
12. Finding a time when the MUST team can plan cooperatively

MUST Project Workshop Activities

Thursday, June 18

Demonstration:	Structural Arithmetic, Shirley Zeiche, Consultant, Mifflin Publishing Company.
Discussion:	Feedback on Individualized Activity Sheet #2.
Tour and Demonstration:	Production facilities Group I -- Photography Group II -- Publications
	Production facilities First Hour: Group I -- Photography Group II --Publications Second Hour: Group I -- Publications Group II -- Photography

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

MUST Project Workshop Activities

Friday, June 19

Activity: Practice in the operation of equipment.

Pre-test: Diagnostic Teaching

Discussion: What are the unique contributions of game formats for learning and instruction?

Activity: Teacher's Lounge Game

Materials Development: Participants study the methodology used to initiate lessons on "Telling Time" in the Structural Arithmetic Program from Houghton-Mifflin. After the sequence of skills for this specific area of instruction has been identified, the group will decide the points in the sequence where supplementary lessons might be programmed for automated media. Participants will then divide into small groups to create these drill exercises.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

PRE-TEST ON DIAGNOSTIC TEACHING

Circle the answer which best fits the description of the child's described behavior.

1. Andy will gesture and grimmace in the strangest ways and at the oddest moments.

   a. attention skill
   b. visual receptive skill
   c. auditory receptive skill

2. Susie makes substitutions of words while reading aloud.

   a. motor skill
   b. auditory-receptive skill
   c. visual-receptive skill

3. Jim gets lost in the middle of arithmetic problems. He shows no difficulty in reading problems and getting started.

   a. motor skill
   b. conceptual skill
   c. automatic skill

4. Joyce performs well when given attractive materials in bright colors, but not too many.

   a. automatic skill
   b. conceptual skill
   c. attention skill

5. Roberta skips words and sometimes complete lines while reading.

   a. automatic skill
   b. motor skill
   c. visual-receptive skill

Answer the following questions by indicating true or false.

6. Rate memory items are associated with automatic skills.

true false

7. Motor tasks are not associated with physical involvement.

true false

8. A cubicle cuts down on extraneous stimuli for the child who attends to everything.

true false

9. The child who cannot make judgements or can not use sound reasoning is lacking in automatic skills.

true false

10. Andy might be lacking in visual receptive skill if he holds his head close to the material he is reading.

true false

Fill in the blanks to indicate the type skill which is described in the following:

attention	automatic
conceptual	visual receptive
auditory receptive	motor

11. Dick is very poor at expressing his thoughts in writing. He is lacking in _____ skills.

12. The fact that Andy does not concentrate and tends to wander off when spoken to shows a deficiency in _____ skills.

13. A child who copies these like this is displaying poor _____ skill.

14. The fact that Kathy reads in a word-by-word manner shows that she lacks _____ skill.

15. When asked to pick up a "pin", Jim picks up a "pen". This action represents a lack in _____ skill.

16. Stanley exhibits deficiency in _____ skill if he is unable to register as many bits of information in a given time as other children his age.

17. Carol has a great deal of trouble with puzzles and "object assembly" items. She has _____ problems.

18. Joe frequently asks for repetition when instructions are given. His problem is of a _____ nature.

Results of Pre-Test on Diagnostic Teaching

June 19, 1970--MUST Workshop

In an attempt to measure the effectiveness of teaching as a result of learning through the use of game playing, the game Teacher's Lounge based upon case etiology and terminology used in the area of learning disability was given our group. We administered the test prior to playing the game. Some teachers had previous knowledge of some terminology and all had been exposed previously to two workshop sessions involving both terminology and causation in cases such as these.

The fact that most mistakes were on terminology involved shows, I think, that Workshop Sessions presented on concepts of input and output and the like were more than reasonably successful. The particular application of terms used by the authors of this game is, in a sense, uniquely theirs. I guess that post test results, after learning in the game, Teacher's Lounge, will show much improvement as a result of training through game playing.

MUST Project Workshop Activities

Monday, June 22

Individualized Activity Sheet #3.

Diagnostic Teaching Game.

Behavioral Analysis of Commercially Prepared Materials, Ellis Richardson, Behavior Analyst

Demonstration of the Distar Language, Reading and Math Materials, Helen Frehmeyer, Consultant.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

INDIVIDUALIZED ACTIVITY SHEET #3

For each of the following pairs of machines, circle the one you would prefer having in your classroom if you could not have both. State briefly the reasons for your preference.

1. Audio Flashcard Readers -- Language Master

2. Record Player -- Reel to Reel Tape Recorder

3. Reel to Reel Tape Recorder -- Cassette Tape Recorder

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

MUST Project Workshop Activities

Tuesday, June 23

Selection of tapes for School Media Center.

Behavioral Analysis of Commercially Prepared Materials.

Presentation of the Hardware Evaluation Check-List.

Small Group Activities:

1. Diagnostic Teaching Game
2. Study of Hardware
    a. MSF-8 and Soundamatic Combination
    b. Check out other equipment

Discussion of the Hardware Evaluation Check-List.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

MUST Project Workshop Activities

Wednesday, June 24

Techniques for building a tape library.

Writing a program based on behavioral analysis of commercially prepared materials.

Feedback on Individualized Activity Sheet #3.

Small Group Activities:

1. Diagnostic Teaching Game
2. Study of Hardware
   a. MSF-8 and Soundamatic Combination
   b. Check out other equipment
3. Writing behavioral objectives.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

FEEDBACK ON INDIVIDUALIZED ACTIVITY SHEET #3

1. Audio Flashcard Reader

12 acceptable responses:	Easier for children to use. Assures against erasure.
3 unacceptable responses:	Children can associate picture on card with auditory message. Can be used for many purposes. Has two tracks so child can record his responses.

Language Master

1 unacceptable response:	Proven to be good device. Effective Individualized Instruction.

2. Record Player

4 acceptable responses:	Easier to use. More commercial materials currently available.(almost unacceptable)
4 unacceptable responses:	Many kinds of materials can be made. More meaningful way of teaching skills. More versatile — bigger variety of uses Can use earphones with it. Will play along with films & filmstrips

Reel-to-Reel Tape Recorder

5 acceptable responses:	More versatile
3 unacceptable responses:	Many may use at same time. Multi-purpose equipment Can be used & operated by pupil Easy to operate Student may proceed at his own rate.

3. Reel-to-Reel

2 unacceptable responses: More versatile
Sound is less distorted.

Cassette Tape Recorder

13 acceptable responses: Smaller & easier to store
Easier to handle
Can take it & use it anywhere

1 unacceptable response: Can be used for individualization

Most creative response: The child would enjoy being alone with this small machine.

MUST Project Workshop Activities

Thursday, June 25

Practice teaching Time Telling Lesson.

Review and critique of Time Telling Lesson Programmed on MSF-8.

Individualized Activity #4.

Behavior Modification and Contingency Management.

Individualized Activity #5.

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

INDIVIDUALIZED ACTIVITY WORKSHEET #5

Select a partner who will initial each of the following activities when you have successfully demonstrated your proficiency.

1. Record a card on the Audio Flashcard Reader to indicate you know how to use the master track as well as the response track.

_____

2. Put a set of pre-numbered slides into an empty carousel tray, set the tray on the projector, and use the remote control to advance the frames. Use a rear projection screen to indicate you understand how to set up this equipment.

_____

3. Insert a cassette into the Sound-a-matic IV and record your voice. then play back.

_____

4. Set up a listening jack box, headphones, and reel-to-reel tape recorder for four pupils. Repeat for the Sound-a-matic.

_____

MUST Project Workshop Activities

Friday, June 26

Hardware Evaluation of MFS-5

Feedback Activity #4

Post Test Diagnostic Teaching Terms

Play Teacher's Lounge Game - PRIZES!

Movie: MUST Fiasco

Refreshments: Compliments of Special Education Department, Atlanta Public Schools

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

Results of Post-Test On Diagnostic Testing
June 26, 1970 - MUST Workshop

During the week of June 22-26 the teachers and resource people in our workshop played the game Teacher's Lounge, in groups of three for approximately half an hour each day.

As a result of learning which took place in the game playing situation, the post-test findings showed an increase in mean score of the group from 64 to 78. Possibly an additional factor which increased the scores on the post test was the issuing to each teacher of a list, designed by the authors of the game, S. Joseph Levine and James Fleming, of the six learning disability terms used in the game.*

Both pre-test and post-test were designed to include eighteen items--five multiple choice items, five true-false items, and eight short answer items. Multiple choice items were taken in direct context from the game cards and the other items except, for format, adhered to learning situations and terminology described in the game.

The point that game playing is an effective aid in facilitating learning in an enjoyable group activity was made. Teachers, we feel, can profit from using game playing as a learning device in the classroom setting.

* Terms drawn from Marshall B. Rosenberg's Diagnostic Teaching (Seattle: Special Child Publications)

POST-TEST ON DIAGNOSTIC TEACHING

Circle the answer which best fits the description of the child's behavior.

1. Pat (age 6) can imitate vertical and horizontal lines, but cannot make a cross.

   a. automatic skill
   b. visual reception and motor skills
   c. auditory reception and motor skills

2. The phrase, "learn from experience" does not apply to Joe. He cannot fuse sensory impressions into meaningful wholes.

   a. conceptual skill
   b. automatic skill
   c. attention skill

3 Susan can draw from direct imitation or trace, but is unable to draw from directions.

   a. attention skill
   b. auditory skill
   c. conceptual skill

4. Joe is unable to add correct grammatical ending to make plurals or past tense.

   a. automatic skill
   b. motor skill
   c. auditory skill

5. Vivian frequently asks for repetition when oral instructions are given.

   a. conceptual skill
   b. attention skill
   c. auditory-receptive skill

Answer the following questions by indicating true or false.

6. A child's inability to generalize would indicate lack of conceptual skill:

   True False

7. A child with an attention problem works well in the classroom with others:

   True False

8. The fact that Billy cannot discriminate larger or smaller without seeing the objects indicates impairment in visual skill:

   True False

9. Eddie's displays of unselective and excessive affection point to a deficiency in the area of attention skills:

   True False

10. Joe has no particular problem if at $5\frac{1}{2}$ years, his printing and writing are poor:

    True False

Using the following terms, fill in the blanks to indicate the type skill which is described in the following:

auditory-receptive skill attention skill

fine motor skill motor skill

automatic skills visual receptive skill

11. The fact that Leon appears lazy after working hard on a writing assignment shows that he possibly lacks _____.

12. Joey is overly attentive when oral instructions are given. He might be lacking in _____.

13. Sally's overly large writing shows that her _____ _____ is not well developed.

14. Billy performs best after being given medication that was prescribed by the physician. An _____ is involved here.

15. Because Bob is unable to relate time and events concurrently, we might say that he lacks _____.

16. The fact that Billy performs better when seated next to a child whose behavior he can model is an example of _____.

17. Charles performs better when given a more comfortable chair.

_____

18. Roberta's poor work on written tests but good participation in class discussion points to her deficiency in _____.

APPENDIX E

EQUIPMENT EXPENDITURES FOR PRODUCTION CENTER AT C. W. HILL

APPENDIX A

Equipment Placed in the

Production Center at C. W. Hill

I. Equipment

1 – Sink Cabinet
1 – Sink
1 – Faucet Assy.
7 – Base Cabinets
1 – 21' Base and counter top (30" W)
1 – Paper Storage Cabinet
1 – Drafting Table
6 – Drawers
3 – Typing Tables
3 – Chairs
1 – Table (36x72x29 H)
2 – Stools
3 – Four Drawer Filing Cabinets
1 – Thermofax Copy Machine
1 – Visual Maker
5 – Instamatic Cameras
1 – Paper Cutter with mat cutter
1 – 12" Paper Cutter
1 – Tracing Board
1 – Roll Laminating Machine
1 – Dry Mount Press
1 – Tacking Iron
1 – Pantograph
1 – Typewriter (Pica)
1 – Typewriter (Primary)
1 – Typewriter (Bulletin)

Subtotal $4,754.19

II. Materials

Thermal transparencies (5 boxes)
Thermal spirit masters (5 boxes)
Thermal Copy Paper (5 boxes)
Flashcubes (6 cases)
Film (50 rolls)
Pre-paid mailers (50)
Laminating film (10 rolls)
Dry Mount tissue (4 rolls)
Vertical filing jackets (5 boxes)
Vertical file guides (3 sets)
Typewriter paper (5 reams)
Carbon paper (2 boxes)
Correction Tape (5 rolls)
Transparency materials (acetate, mounts, tapes, etc.)
Graphics materials (inks, paper, templates, etc.)
Miscellaneous (scissors, rulers, erasers, etc.)

Subtotal $1,439.55

TOTAL $6,193.74
(Purchased from 70-71 Budget)

APPENDIX F

EQUIPMENT PROFICIENCY CHECKLIST
FROM PRODUCTION CENTER WORKSHOPS

Group C.W. Hill Staff

Date 2/17/72

Production Center Workshop Activities

	Judy Feldman	Joyce Bostic	Bertha Harden	Gwen Leonard	Yvonne Johnson	Sallie Anthony		
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓	✓	✓		
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓	✓	✓		
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓	✓	✓		
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓		
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓		
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓		
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓	✓	✓		
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓	✓	✓		
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓	✓	✓		
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓	✓	✓		
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓	✓	✓		

Group C.W. Hill Staff

Date 2/18/72

Production Center Workshop Activities

	Ernestine Sutton	Phyllis Macon	Esther Morse	Evelyn Clowers	Richard Pullen	Mary Burke	Florence Simpson	
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓	✓	✓	✓	
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓	✓	✓	✓	
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓	✓	✓	✓	
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓	✓	✓	✓	
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓	✓	✓	✓	
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓	✓	✓	✓	

Group C.W. Hill Staff

Date 2/18/72

Production Center Workshop Activities

	Evelyn Hood	Flora Woods	Nannie Parker	Margaret Gilbert	Pamela Whitehead			
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓	✓			
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓	✓			
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓	✓			
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓			
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓			
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓			
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓	✓			
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓	✓			
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓	✓			
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓	✓			
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓	✓			

Group C.W. Hill Staff

Date 2/23/72

Production Center Workshop Activities

	Pauline Wright	Elva Foster	Mary Long	Almeda Griggs				
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓				
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓				
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓				
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓				
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓				
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓				
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓				
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓				
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓				
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓				
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓				

Group C.W. Hill Staff

Date 2/23/72

Production Center Workshop Activities

	Ellen Arnoultz	Joyce Crosswy	Ivory Shepherd	Janie Ellis	Bonnie Nutt	Rita Tucker	Naja Hayes	Patricia Albert
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓	✓	✓	✓	✓
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓	✓	✓	✓	✓
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓	✓	✓	✓	✓
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	✓
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	✓
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	✓
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓	✓	✓	✓	✓
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	✓
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	✓
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓	✓	✓	✓	✓
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓	✓	✓	✓	✓

Group C.W. Hill Staff

Date 2/25/72

Production Center Workshop Activities

	Ossie Thomas	Curlye Mattox	Eunice Thompson	Joyce Jones	Gladys Dorsey	Helen Davis	Verdell Paige	
1. Use pantograph to duplicate an image, enlarge an image and reduce an image.	✓	✓	✓	✓	✓	✓	✓	
2. Draw letters of the alphabet using templates and stencils.	✓	✓	✓	✓	✓	✓	✓	
3. Draw letters of the alphabet using Post lettering set.	✓	✓	✓	✓	✓	✓	✓	
4. Make a master ditto stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
5. Make a master mimeograph stencil using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
6. Make a transparency using A.B. Dick thermal master-transparency maker.	✓	✓	✓	✓	✓	✓	✓	
7. Make a transparency using 3M transparency Kit.	✓	✓	✓	✓	✓	✓	✓	
8. Make a transparency using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	
9. Laminate a picture or game using GBC laminating machine.	✓	✓	✓	✓	✓	✓	✓	
10. Use dry mount press and tacking iron to dry mount a print to poster board.	✓	✓	✓	✓	✓	✓	✓	
11. Set up and take a picture with the visual-maker.	✓	✓	✓	✓	✓	✓	✓	

APPENDIX G

PRODUCTION CENTER EVALUATION

PRODUCTION CENTER EVALUATION

	NAME OF TEACHER	GRADE LEVEL	OBJECTIVES LISTED		OBJECTIVES ACHIEVED		EQUIPMENT USED	MATERIALS USED	
			Yes	No	Yes	No		Type	Quantity
1.	Margaret Gilbert	1	x		x		Laminating Machine	Laminating Film	15 feet
2.	Bonnie Nutt	4	x		x		"	"	30 "
3.	E. Foster	5	x		x		"	Poster Board Laminating Film	1 2 ft.
4.	E. Foster	5	x				"	Poster Board Laminating Film	1 4 ft.
5.	Bonnie Nutt	4	x		x		"	Poster Board Laminating Film	1 10 ft.
6.	Elva Foster	5	x		x		Laminating Machine Typewriter	Laminating Film	5 ft.
7.	Elva Foster	5	x		x		Laminating Machine Dry Mount Press, Tacking Iron	Laminating Film Dry Mount Tissue	15 ft. 6 pieces
8.	E. L. Thompson	MUST	x		x		Dry Mount Press, Tacking Iron	Poster Board Dry Mount Tissue	1 10 pieces
9.	E. L. Thompson	MUST	x		x			Copies of Dolch Words: Bingo Game Directions	
10.	E. L. Thompson	MUST	x		x			Blend of Vowels Sheets	
11.	Mary H. Burke	1	x		x		Laminating Machine	Poster Board Laminating Film	1 2 ft.
12.	Yvonne S. Johnson	K – 5	x		x		Laminating Machine	Laminating Film	15 ft.
13.	Patricia D. Albert	K – 7	x		x		"	"	10 ft.
14.	Rebecca L. Freeman	EMR	x				"	"	10 ft.
15.	Mrs. Ivory Shepherd	4	x				Camera	Film	3 rolls
16.	D. Blount	1	x				"	"	1 "

PRODUCTION CENTER EVALUATION

	NAME OF TEACHER	GRADE LEVEL	OBJECTIVES LISTED		OBJECTIVES ACHIEVED		EQUIPMENT USED	MATERIALS USED	
			Yes	No	Yes	No		Type	Quantity
17.	Joyce D. Jones	Kdg.	x		x		Laminating Machine	Laminating Film	10 ft.
18.	Joyce D. Jones	"	x		x		"	"	10 ft.
19.	E. Foster	5	x		x		"	"	10 ft.
20.	E. Foster	5	x		x		"	"	10 ft.
21.	Joyce Crosswy	4	x		x		"	"	10 ft.
22.	Joyce Crosswy	4	x		x		"	"	10 ft.
23.	Judy Feldman	3	x		x		"	"	15 ft.
24.	E.N. Clowers	1	x		x		Camera	Bulbs Film	
25.	Karen Fisher	1	x		x		Camera	Pre-Paid Mailers film	
26.	Eunice Thompson	MUST	x		x		Camera	Film & bulbs Mailers	2 3
27.	Richard Pullen	1	x		x		Laminating Machine	Laminating film	15 ft.
28.	Sallie Anthony	3	x		x		Laminating Machine	Laminating film	
29.	Eunice Thompson	MUST	x		x		"	"	15 ft.
30.	Eunice Thompson	MUST	x		x		"	"	25 ft.
31.	Eunice Thompson	MUST	x		x		"	"	10 ft.
32.	Eunice Thompson	MUST	x		x		"	"	10 ft.
33.	Gladys Dorsey	Kdg.	X		x		"	"	5 ft.

APPENDIX H

EQUIPMENT INVENTORY

Hardware
~~Software~~ Inventory Report

School MUST - Media Center

Date	Item
5/22/72	2 Audio Flashcard Reader, Serial No. 8885, 9070 5 Panasonic Cassette Player/Recorder, Serial No. 92852, 93154, 01002, 18167, 18157 1 Viewlex Cassette Tape Player CP-1, Serial No. LRC-008 2 Graflex Study Mate Filmstrip Projector, Serial No. ABE-13212, LRC 044 5 Viewlex Cassette Tape Players CP-2, Serial No. 21134, 16495, 19734, 19825, 22257 1 Language Master & Headset - Bell & Howell 711-B, Serial No. 0317039 1 Mobile A.V. Equipment Center, H. Wilson – Serial No. LRC-041 2 Tape Recorder Cailfone 70TC, Serial No. 19154, 19257 1 Mackenize Dissolve Unit AD-2, Serial No. 10809-07 1 Mackenize Audio Programmer Tri-Tone I, Serial No. 108-09-01 1 Sony Stereo Tape Recorder TC-252, Serial No. 111587 1 Camera 35mm Single Reflex 1 Camera (Polaroid) Model 340, Serial No. BE-202143 1 Camera (Kodak) Instamatic 704, Serial No. 019818 1 Camera (Kodak) Visualmaker Prod. Kit Instamatic 304, Serial No. 880570 1 Technicolor (Single Concept) Super 8 Projector 810, Serial No. 279298 1 Technicolor (Single Concept) Super 8 Projector 510A, 251608 1 Graflex Motion Picture Projector 920, Serial No. 363283 5 Kodak Carousel Projectors 750, Serial No. 1125567, 1125398, 1006846, 1486474, 1004795 1 Kodak 2x2 Auto Slide Proj. Ektagraphic AF, Serial No. 1206555 1 Kodak Filmstrip Adapter 1 3m 2x2 Slide/Sound Projector 125, Serial No. 105172 and case 3 Kodak 2x2 Slide Projector Ektagraphic E, Serial No. 15118690, 1518769, 1518777 1 Kodak MFS-8 Projector, Serial No. 006191 1 Elco Optisonic Sound-o-matic Cassette Play/Recorder Programmer M-3, Serial No. 1079 1 Technicolor Super 8 Projector, Model 1000B, A66878

Signed _____

Date _____

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

Hardware
~~Software~~ Inventory Report

School MUST - Media Center

Date	Item
5/22/72	2 HPI Rear Projection Screen Group Show-631, Serial No. LRC-004, LRC-005 4 HPI Rear Projection Telescreen - 605, Serial No. LRC-025, LRC-026, LRC-033, LRC-035 Student Headsets Trim Model 104-9-06 13 Instamatic 44 Cameras (Kodak) 2 Kodak M24 Instamatic Movie Camera 3 Kodak Instamatic 314 Camera 2 Montage Cassette Tape Recorders, Model 600, Serial No. 7103818, 7102786

Signed_____

Date_____

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

Hardware Inventory Report

School C. W. Hill

Date	Item
5/22/72	8 Audio Flashcard Readers – Serial No. 13534, 13533, 13503, 13494, 8895, 8896, 8913, 8914
	5 Panasonic Cassette Recorder/Players, Model RQ209, Serial No. 19058, 24755, 22104, 22114, 22118
	6 Viewlex Cassette Tape Player Model Cp2, Serial No. 16394, 16398, 16423, 16478, 16499, 18166
	4 Graflex Study Mate Filmstrip Previewer – Serial No. ABE-13207, ABE-13213, ABE-13209, ABE-13210
	2 Wilson Mobile Equipment Center – Serial No. LRC-039, LRC-040
	2 Kodak Carousel Slide Projectors – Model Ektagraphic E; Serial No. 1517651, 1517565
	5 H.P.I. Rear Projection Screen - Serial No. LRC-023, LRC-019, LRC-020, LRC-024, LRC-037
	1 Kodak MFS-8 Super 8 Projector, Serial No. 006428
	1 Kodak Visualmaker - Instamatic 304, Serial No. 863350
	2 Technicolor Super 8, Single Concept Projector, Serial No. D-326888, 266155
	2 Manual Underwood Typewriter, Serial No. B-67550, B-67590
	2 Dukane Tape/Filmstrip Viewer – Serial No. 362372, 362407
	2 Elco-Optisonic Sound-o-matic Cassette Recorder, Serial No. 1023, 1024
	30 Student Headsets Model 104-9-06
	1 Technicolor Super 8 Projector Model 1000-B-66868

Signed_____

Date_____

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

Hardware ~~xxxxxxx~~ Inventory Report

School J. M. Jones

Date	Item
5/22/72	8 Audio Flashcard Readers – Serial No. 8893, 9018, 9063, 8918, 13481, 8915, 8857, 14359
	5 Cassette Tape Player/Recorder, Panasonic RQ-209 – Serial No. 24996, 24758, 24984, 25010, 24795
	4 Filmstrip Previewers Graflex Study Mate – Serial No. ABE-13203, ABE-13205, ABE-13206, ABE-13204
	6 Viewlex Cassette Players – Serial No. 16841, 19773, 16840, 16844, 16845, 16728
	2 Tape Filmstrip Projector Dukane – Serial No. 362401, 362418
	2 Mobile A.V. Equipment Center Wilson Mec. – Serial No. LRC-042, LRC-043
	3 Kodak Ektagraphic – E Slide Projectors – Serial No. 1517433, 1518792, (Library 1437411)
	2 Technicolor Single Concept Super 8 Projector 819 A - Serial No. 326910, 266137
	2 Cassette Player/Recorder Elco-Optisonic 4B 1027, 1029
	5 Rear Projection Screens API Telescreen 605, Serial No. LRC-031, LRC-032, LRC-030, LRC-029, LRC-034
	1 Super 8 Projector, Kodak Ektagraphic MFS-8, Serial No. 003894
	2 Cassette Tape Player/Recorder Norelco CC-150 – Serial No. 341596, (Library 428363)
	2 Underwood Primary Typewriter L-88, Serial No. B6-5290, B-675887 (Repair)
	1 Kodak Ektagraphic Visual Maker – Serial No. 879135
	30 Student Headsets Trim 104-9-06
	1 Technicolor Super 8 Projector 1000 B - 66867

Signed _____

Date _____

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

Hardware Inventory Report

School L. P. Miles

Date	Item
5/22/72	8 Audio Flashcard Readers - Serial No. 13485, 8861, 8862, 8952, 8920, 13486, 13484, 13492
	3 Cassette Tape Player/Recorders – Panasonic RQ 209 – Serial No. 17170, 25108, 19070
	7 Tape Cassette Players Viewlex – CP-2 – Serial No. 16517, 21151, 16722, 16393, 19735, 21134, 18377
	4 Filmstrip Previewers Study Mate – Serial No. ABE-13200, ABE-13201, ABE-13202, ABE-13208
	2 Tape Filmstrip Previewers Dukane 28A11 – Serial No. 362416, 362375
	2 Underwood Primary Typewriters Manual – Serial No. B-65293, B-152889
	2 Kodak Ektagraphic –E Slide Projectors – Serial No. 1517438, 1518636
	2 Technicolor Super 8 Single Concept Projectors – 810 – Serial No. 266152, 326858
	1 Super 8 Projector Kodak MFS–8 – Serial No. 066842
	5 Rear Projection Screens HPI Telescreen 605 – Serial No. LRC-036, LRC-027, LRC-022, LRC-018, LRC-205
	1 Visual Maker Pro. Kit – Kodak Inst. 304 – 850773
	2 Hoffman Reader Teaching Machines Mark IV – Serial No. 10921, 10937
	30 Trim Student Headsets M-104-9-06
	1 Sound-o-matic Serial No. 1032
	1 Technicolor Super 8 Projector Model 1000B – 66859

Signed_____

Date_____

MUST PROJECT
Learning Resources Center
Atlanta Public Schools

APPENDIX I

DATA ANALYSES

The following section contains pre and post-test data gathered on the children in the MUST project during 1971-72. The measures used in obtaining this data were:

1. Wechsler Intelligence Scale for Children
2. Basic Skills Test
3. Following Directions Test
4. Houghton - Mifflin Pre-Reading Inventory
5. Dolch Sight Vocabulary Lists
6. Allyn - Bacon Diagnostic Test (Primer Level)
7. Stanford Diagnostic Reading Test
8. Behavior Rating Scale
9. Metropolitan Achievement Test

All statistical comparisons were computed through a t-test analysis of correlated means. Thus, each comparison represents a within - group analysis of progress for a particular skill over a seven months period of daily, 90 minute resource room experiences. All statistical comparisons were made at the .05 level of significance. In order to increase the readability of this section the results will be separated into sections corresponding to the afore mentioned tests.

1. Wechsler Intelligence Scale for Children (WISC)

Table one presents the mean IQ scores for 119 MUST students on both the pre and post-test administrations of the Wechsler Intelligence Scale for Children (WISC). The WISC consists of twelve subtests and these are grouped into a verbal and performance scales.

The total groups of students made significant gains in IQ scores while participating in MUST experiences. The mean IQ for the total group was 75.31 in September, 1971, increasing to 80.74 in May, 1972. This indicated that the total group of children receiving MUST experiences jumped 5 points in IQ scores. It should be pointed out that the Post-Test mean no longer fell within the range usually classified (50-80) as educable mentally retarded. A closer examination of Table 1 also reveals that the total primary and the total intermediate groups made significant gains in IQ scores. One school did not make significantly greater scores. However, each school and each level in that school did increase in mean IQ scores.

TABLE 1

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF IQ SCORES FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	24	76.71	11.84	83.29	10.72	3.70*
	Intermediate	27	72.00	9.74	75.63	10.31	2.35*
	Total	51	74.22	10.93	79.24	11.09	4.27
J. M. JONES	Primary	21	77.38	10.51	88.86	12.82	7.40
	Intermediate	9	73.44	9.21	81.44	11.54	A
	Total	30	76.20	10.15	86.63	12.73	6.31*
L. P. MILES	Primary	22	73.59	10.89	76.14	12.97	0.89
	Intermediate	16	79.50	11.54	80.81	13.38	0.75
	Total	38	76.08	11.40	78.11	13.17	1.13
Total	Primary	67	75.90	11.08	82.69	13 03	5.24
Total	Intermediate	52	74.56	10.59	78.23	11.63	3.00
TOTAL		119	75.31	10.84	80.74	12.59	5.37

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

2. Basic Skills Test

The Basic Skills Test was developed by the MUST staff and is taken from various sources. The test consists of seven subtests representing four readiness categories:

A. Color Labeling Test - a 24 page booklet which tests for receptive (Show me blue) and expressive (What is the name of this color?) color (12 colors) labeling ability. Adapted from a test devised by the New York Institute of Developmental Studies.

B. Shape Labeling Test - a 16 page booklet which tests for receptive (Show me the triangle.) and expressive (What is the name of this shape?) shape (8 shapes) labeling activity. Adapted from a test developed by the New York Institute of Development Studies.

C. Number Tests - tests for identifying capital and simple number concepts.

D. Alphabet test - tests for identifying capital and small letters at the expressive (Tell me the names of these letters.) level.

The children participating in MUST experiences showed significant progress in developing the above - mentioned readiness skills. Children diagnosed as needing developmental activities in readiness skills showed significant gains in their total scores on the Basic Skills Test. These results are shown in table 2. It should be noted that each of the MUST schools showed significant gains in the Basic Skills Test. Tables 3 through 8 contain the data for the individual subtests. The three MUST schools made significant gains in non-verbal Color Naming, verbal Color Naming, non-verbal Shape Labeling, and verbal Shape Labeling. With regard to Number Identification and Number Concepts, statistical significance was obtained by the Total Primary group. The total Intermediate group obtained significance only on the Number Concept Subtest.

In Table 9 are presented the results obtained on the letter identification subtest. Only the primary level at one school did not obtain significance. Special attention should be paid to this subtest and to the pre and post-test means reported in Table 9. The intermediate groups were compressed of fourth, fifth, and sixth grade children, who, as the results have shown, had experienced the respective amount of public education without learning the alphabet. The MUST project has definitely made a significant difference in this one skill essential to reading.

TABLE 2

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE BASIC SKILLS TEST
FOR C.W. HILL, J.M. JONES AND L.P. MILLES SCHOOLS
(TOTAL POSSIBLE SCORE = 109)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	83.13	21.91	105.56	4.37	4.52*
	Intermediate	6	100.50	2.81	108.33	1.21	A
	Total	22	87.86	20.22	106.32	3.94	4.35*
J. M. JONES	Primary	17	76.24	25.21	94.12	21.44	3.37
	Intermediate	12	91.17	11.51	108.08	2.31	5.73
	Total	29	82.41	21.71	99.90	17.71	5.31*
L. P. MILES	Primary	16	73.06	32.56	97.81	23.09	4.67*
	Intermediate	2	101.50	2.12	106.50	0.71	A
	Total	18	76.22	31.94	98.78	21.87	4.57*
Total	Primary	49	77.45	36.67	9906	18.68	7.31
Total	Intermediate	20	95.00	10.12	108.00	1.95	6.25
TOTAL		69	82.54	24.39	101.65	16.25	8.59

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 3

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE COLOR NAME (NON VERBAL)
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 12)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	9.81	2.64	12.00	0.00	3.32*
	Intermediate	6	11.83	0.41	12.00	0.00	A
	Total	22	10.36	2.42	12.00	0.00	3.17*
J. M. JONES	Primary	17	9.59	1.50	11.12	1.41	3.98*
	Intermediate	12	10.42	0.79	12.00	0.00	6.92*
	Total	29	9.93	1.31	11.48	1.15	6.44*
L. P. MILES	Primary	16	8.63	3.77	11.63	0.81	3.43*
	Intermediate	2	11.00	0.00	11.50	0.71	A
	Total	18	8.89	3.63	11.61	0.78	3.40*
Total	Primary	49	9.35	2.77	11.57	1.00	5.30*
Total	Intermediate	20	10.90	0.91	11.95	0.22	4.97*
TOTAL		69	9.80	2.48	11.68	0.87	6.59*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 4

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE COLOR NAME (VERBAL)
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 12)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	8.81	2.97	11.62	0.72	3.70*
	Intermediate	6	11.33	0.82	11.83	0.41	A
	Total	22	9.50	2.79	11.68	0.64	3.6
J. M. JONES	Primary	17	8.18	2.46	10.65	1.93	6.7
	Intermediate	12	9.17	1.40	12.00	0.00	6.9
	Total	29	8.59	2.11	11.21	1.61	9.7*
L. P. MILES	Primary	16	7.88	3.65	11.13	1.09	4.65*
	Intermediate	2	10.50	0.71	11.50	0.71	A
	Total	18	8.17	3.54	11.17	1.04	4.6
Total	Primary	49	8.29	3.01	11.12	1.39	7.9
Total	Intermediate	20	9.95	1.54	11.90	0.31	5.4
TOTAL		69	8.77	2.77	11.35	1.23	9.3*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 5

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
ANT t-VALUE OF THE SHAPE NAME (NONVERBAL)
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 8)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	6.50	2.07	7.88	0.34	2.67*
	Intermediate	6	7.67	0.52	8.00	0.00	A
	Total	22	6.82	1.84	7.91	0.29	2.81*
J. M. JONES	Primary	17	6.65	1.37	7.65	0.79	2.43*
	Intermediate	12	7.33	0.78	7.92	0.29	2.24*
	Total	29	6.93	1.19	7.76	0.64	3.15*
L. P. MILES	Primary	16	6.06	3.07	7.94	1.29	2.72*
	Intermediate	2	7.50	0.71	7.50	0.71	A
	Total	18	6.22	2.92	7.89	1.23	2.66*
Total	Primary	49	6.41	2.23	7.82	0.83	4.59*
Total	Intermediate	20	7.45	0.69	7.90	0.31	2.65*
TOTAL		69	6.71	1.96	7.84	0.76	4.36*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 6

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE SHAPE NAME (VERBAL)
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 8)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	4.50	2.66	7.38	0.72	4.55*
	Intermediate	6	7.33	0.82	7.67	0.82	A
	Total	22	5.27	2.62	7.45	0.74	4.1
J. M. JONES	Primary	17	5.18	1.81	6.71	1.49	4.7
	Intermediate	12	6.75	0.75	7.83	0.39	4.72*
	Total	29	5.83	1.65	7.17	1.28	6.34*
L. P. MILES	Primary	16	4.38	2.58	7.31	1.62	3.39*
	Intermediate	2	7.00	1.41	7.00	1.41	A
	Total	18	4.67	2.59	7.28	1.56	3.7
Total	Primary	49	4.69	2.35	7.12	1.35	7.0
Total	Intermediate	20	6.95	0.83	7.70	0.66	3.6
TOTAL		69	5.35	2.27	7.29	1.21	7.24

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 7

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE NUMBER IDENTIFICATION
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTLAL POSSIBLE SCORE = 10)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	7.56	3.41	9.44	1.55	2.91*
	Intermediate	6	9.17	1.33	10.00	0.00	A
	Total	22	8.00	3.04	9.95	1.33	3.21*
J. M. JONES	Primary	17	7.82	3.61	9.53	1.94	2.23*
	Intermediate	12	10.00	0.00	10.00	0.00	1.00
	Total	29	8.72	2.94	9.72	1.49	2.12*
L. P. MILES	Primary	16	7.06	4.30	9.06	2.62	1.66
	Intermediate	2	10.00	0.00	10.00	0.00	A
	Total	18	7.39	4.15	9.17	2.43	1.65
Total	Primary	49	7.49	3.72	9.35	2.05	3.65*
Total	Intermediate	20	9.75	0.78	10.00	0.00	1.42
TOTAL		69	8.14	3.32	9.54	1.75	3.72*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 8

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND T-VALUE OF THE NUMBER CONCEPT
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 7)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	6.44	1.21	6.31	1.74	-0.69
	Intermediate	6	6.33	1.21	7.00	0.00	A
	Total	22	6.41	1.18	6.50	1.50	0.4
J. M. JONES	Primary	17	5.82	1.88	6.65	0.79	2.7
	Intermediate	12	6.33	0.65	7.00	0.00	3.5
	Total	29	6.03	1.50	6.79	0.62	3.99*
L. P. MILES	Primary	16	5.31	2.85	6.75	0.77	1.83
	Intermediate	2	7.00	0.00	7.00	0.00	A
	Total	18	5.50	2.73	6.78	0.73	1.8
Total	Primary	49	5.86	2.09	6.57	1.17	2.4
Total	Intermediate	20	6.40	0.82	7.00	0.00	3.2
TOTAL		69	6.01	1.83	6.70	1.00	3.20*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 9

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE LETTER IDENTIFICATION
SUBTEST OF THE BASIC SKILLS TEST FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 52)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	16	39.50	11.13	50.94	1.07	4.13*
	Intermediate	6	46.83	3.13	51.83	0.41	A
	Total	22	41.50	10.09	51.18	1.01	4.62*
J. M. JONES	Primary	17	33.00	18.13	41.82	15.49	1.92
	Intermediate	12	41.17	11.05	51.33	2.31	3.53*
	Total	29	36.38	15.89	45.76	12.73	3.23*
L. P. MILES	Primary	16	33.75	17.91	44.00	17.34	3.20*
	Intermediate	2	48.50	0.71	52.00	0.00	A
	Total	18	35.39	17.49	44.89	16.49	3.29*
Total	Primary	49	35.37	16.03	45.51	13.77	4.90*
Total	Intermediate	20	43.60	9.10	51.55	1.79	4.35*
TOTAL		69	37.75	14.79	47.26	11.93	6.10*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

3. Following Directions Test

In the Following Directions Test a child is shown 12 pictures and asked to respond to given oral directions. For example, "put an X on the talking tree." This test attempts to determine a child's understanding of directions including receptive preposition understanding.

The results are shown in Table 10. The total group of children made significant gains in understanding the directions measured by this test.

TABLE 10

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE FOLLOWING DIRECTIONS
TEST FOR C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 12)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	15	10.20	1.82	11.80	0.77	5.53*
	Intermediate	4	10.50	1.00	11.50	0.58	A
	Total	19	10.26	1.66	11.74	0.73	5.43*
J. M. JONES	Primary	4	9.50	1.29	9.5	3.00	A
	Intermediate	3	7.67	0.58	12.00	0.00	A
	Total	7	8.71	1.38	10.57	2.51	A
L. P. MILES	Primary	6	9.33	1.37	10.50	1.97	A
	Intermediate	-	-	-	-	-	-
	Total	6	9.33	1.37	10.50	1.97	A
Total	Primary	25	9.88	1.64	11.12	1.76	3.90*
Total	Intermediate	7	9.29	1.70	11.71	0.49	A
TOTAL		32	9.75	1.65	11.25	1.59	4.87*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

4. Houghton-Mifflin - Pre-Reading Inventory

Part One of the inventory which was not administered is a survey containing two tests. Part Two of the inventory contains 4 tests. Test 1, entitled Using Context, presents 8 test items which measure the pupil's ability to use context to call to mind a word which makes sense with that context.

Example - "It was summer when the family went on their trip. Mother reminded Janet to take her _____." Four pictures are shown in the test booklet: swimsuit, mittens, sunglasses, sun. Pupils are asked to put a line under the pictures that make sense with what is read.

Test 2, entitled Finding Letters, contains 18 test items and measures a pupil's ability to identify letter forms by name.

Example - Given a choice of these letters (t,g,n), pupil is asked to "Draw a line under the 'n'."

Test 3, entitled Listening for Letter Sounds, contains 14 test items and measures both the pupil's understanding of what is meant by the beginning of a spoken word and his awareness of the fact that certain consonant sounds are used at the beginning of words.

Example - The pupil is presented a stimulus picture (pie) accompanied by three other pictures (thimble, pin, fence) and told to "Draw a line from the pie to the other thing in the box that starts like pie."

Test 4, entitled Matching Letters and Sounds, contains 18 test items and measures a pupil's knowledge of letter-sound association for consonants.

Example - The pupil is presented a letter of the alphabet accompanied by pictures of three objects and asked to "Draw a line from the letter to the picture of something that starts with the sound that the letter stands for."

Table 11 presents the mean reading readiness scores for group of pupils on both the pre and post-test administrations of the Houghton-Mifflin Pre-Reading Inventory. As mentioned above, this test is comprised of 4 subtests measuring these aspects of the reading readiness process: using context, finding letters, listening for letter sounds, and matching letters and sounds. The total group of subjects made significant gains in reading readiness skills while participating in MUST experiences. A closer look at Table 11 revealed that each school and level for which a t-test was computed made significant gains. The results of the 4 subtests are down in Tables 12 through 15. With regard to Using Context the total intermediate group obtained significant results but this was not found for any school or level. The Finding Letters subtest results in Table 13 show that the total group and the intermediate group made significant progress. However, significant results were not obtained for the total primary group. Tables 14 and 15 present the data for Listening for Letter Sounds and Matching Letters and Sounds. The total group, the total primary, the total intermediate, and the total groups for the 3 MUST schools made statistically significant gains in these areas of reading readiness skills.

TABLE 11

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE HOUTHTON-MIFFLIN
PRE-READING INVENTROY FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 58)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	40.90	9.37	48.6	16.05	2.53*
	Intermediate	13	50.00	6.28	54.23	5.36	2.67*
	Total	33	44.48	9.34	50.82	13.09	3.25
J. M. JONES	Primary	2	28.00	2.83	24.50	9.19	A
	Intermediate	10	44.70	7.56	57.20	1.40	5.53
	Total	12	41.92	9.47	51.75	13.09	3.71*
L. P. MILES	Primary	14	37.50	7.63	50.29	7.01	6.70*
	Intermediate	-	-	-	-	-	-
	Total	14	37.50	7.63	50.29	7.01	6.70
Total	Primary	36	38.86	8.91	47.92	13.94	4.66
Total	Intermediate	23	47.70	7.22	55.52	4.33	5.00
TOTAL		59	42.31	9.30	50.88	11.76	6.46*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 12

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE USING CONTEXT SUBTEST OF
THE HOUGHTON-MIFFLIN PRE-READING INVENTROY FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 8)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	6.55	1.39	6.20	3.21	-0.51
	Intermediate	13	6.85	1.52	7.54	1.20	1.56
	Total	33	6.67	1.43	6.73	2.66	0.13
J. M. JONES	Primary	2	4.00	1.41	7.00	1.41	A
	Intermediate	10	7.30	1.34	8.00	0.00	1.66
	Total	12	6.75	1.82	7.83	0.58	2.17
L. P. MILES	Primary	14	7.57	0.76	7.50	1.09	-0.20
	Intermediate						
	Total	14	7.57	0.76	7.50	1.09	-0.20
Total	Primary	36	6.81	1.43	6.75	2.55	-0.13
Total	Intermediate	23	7.04	1.43	7.74	0.92	2.29*
TOTAL		59	6.89	1.42	7.14	2.11	0.82

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 13

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS AND t-VALUE OF THE FINDING LETTERS SUBTEST OF THE HOUGHTON-MIFFLIN PRE-READING INVENTROY FOR C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS (TOTAL POSSIBLE SCORE = 18)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	15.70	2.92	16.50	3.91	0.80
	Intermediate	13	17.38	0.96	17.69	0.48	1.17
	Total	33	16.36	2.47	16.97	3.09	0.9
J. M. JONES	Primary	2	12.00	2.83	11.50	2.12	A
	Intermediate	10	17.00	1.63	17.80	0.63	1.9
	Total	12	16.17	2.59	16.75	2.60	1.5
L. P. MILES	Primary	14	15.71	2.73	17.71	0.83	2.62*
	Intermediate						
	Total	14	15.71	2.73	17.71	0.83	2.6
Total	Primary	36	15.50	2.89	16.69	3.27	1.3
Total	Intermediate	23	17.22	1.28	17.74	0.54	2.2
TOTAL		59	16.17	2.53	17.10	2.61	2.3

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 14

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE LISTENING FOR LETTER SOUNDS
SUBTEST OF THE HOUGHTON-MIFFLIN PRE-READING INVENTORY FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 14)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	7.60	3.45	11.75	5.23	3.21*
	Intermediate	13	11.69	2.73	12.85	1.77	2.09
	Total	33	9.21	3.71	12.18	4.25	3.52*
J. M. JONES	Primary	2	6.00	0.00	3.50	4.95	A
	Intermediate	10	9.30	2.95	13.90	0.32	4.31*
	Total	12	8.75	2.96	12.17	4.32	2.84*
L. P. MILES	Primary	14	5.93	3.47	10.86	3.51	3.35*
	Intermediate						
	Total	14	5.93	3.47	10.86	3.51	3.35*
Total	Primary	36	6.86	3.42	10.94	4.39	4.46*
Total	Intermediate	23	10.65	2.96	13.30	1.43	4.25*
TOTAL		59	8.34	3.72	11.86	4.07	5.76*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 15

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE MATCHING LETTERS AND SOUNDS
SUBTEST OF THE HOUGHTON-MIFFLIN PRE-READING INVENTORY FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 18)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	11.05	4.57	14.15	7.28	2.02
	Intermediate	13	14.08	2.40	16.15	3.11	2.36*
	Total	33	12.24	4.10	14.94	6.00	2.7[illegible]
J. M. JONES	Primary	2	6.00	1.41	2.50	3.54	A
	Intermediate	10	11.10	4.68	17.50	0.85	4.6[illegible]
	Total	12	10.25	4.69	15.00	5.98	2.83*
L. P. MILES	Primary	14	8.29	4.16	14.21	3.89	5.20*
	Intermediate						
	Total	14	8.29	4.16	14.21	3.89	5.2[illegible]
Total	Primary	36	9.69	4.52	13.53	6.49	3.7[illegible]
Total	Intermediate	23	12.78	3.79	16.74	2.45	4.4[illegible]
TOTAL		59	10.90	4.48	14.78	5.49	5.4[illegible]

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

5. Dolch Sight Vocabulary Lists

The Dolch Sight Vocabulary Lists are comprised of nine lists (Sets A through I) containing 24 words per set. The results are presented in Table 16. The total group and the total primary and intermediate groups made significant progress in learning these sight vocabulary lists. A closer examination of the pre and post-test means revealed the primary and intermediate levels at both schools tested doubled the amount of vocabulary words they recognized. This is especially significant at the intermediate. Children who had learned to recognize a certain number of words after approximately four years of public education had not doubled their sight vocabulary within seven months.

TABLE 16

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DOLCH SIGHT VOCABULARY
FOR C.W. HILL AND J.M. JONES SCHOOLS
(TOTAL POSSIBLE SCORE = 216)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	20	15.80	15.15	101.45	77.29	5.35*
	Intermediate	27	58.33	41.97	139.11	73.46	7.75*
	Total	47	40.23	39.27	123.09	76.63	9.6
J. M. JONES	Primary	22	42.91	57.03	86.09	78.22	5.1
	Intermediate	20	86.80	60.63	172.60	65.42	6.3
	Total	42	63.81	62.14	127.29	83.84	7.3*
L. P. MILES	Primary						
	Intermediate						
	Total						
Total	Primary	42	30.00	44.27	93.40	77.22	7.2
Total	Intermediate	47	70.45	52.12	153.36	71.40	10.5
TOTAL		89	51.36	52.40	125.07	79.68	12.43*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

6. Allyn-Bacon Diagnostic Tests

Tests 3, 4, 5 and 6 of the Allyn-Bacon Our School Series are diagnostic achievement tests. They are administered to ascertain how well children have mastered primer lessons and their ability to read at the primer level.

Test 3 - Part 1 - The child is presented with a sheet of paper divided into boxes. Each box contains a picture and three words in it. The child is instructed to draw a line under the word which begins with the same sound as the name of the picture.

Part 2 - The child is again presented with a sheet of paper divided into boxes. Each box has a key word and three other words in it. The child is instructed to draw a line under the word which has the same vowel sound as the first, key word.

The knowledge measured in Test 3, Part 1 is the visual-auditory perception of the initial consonant blends and digraphs used in the primer. Part 2 of Test 3 measures the visual auditory perception of the short vowel sounds.

Test 4 - Parts 1 and 2 - The child is instructed to underline on his sheet the words pronounced by the tester. Test 4, Part 1, measures the visual-auditory perception of initial consonant substitution. Part 2 of Test 4 measures the ability to use substitution of initial consonants or of final consonants as a word attach skill.

Tests 5 and 6 - Measure the child's word recognition and comprehension of oral and silent reading passages.

Table 17 presents the total raw score means for the selected MUST children on both the pre and post-test administrations of the Allyn-Bacon Diagnostic Tests for the primer level. Statistically significant gains were made by each MUST school and both levels in the school.

The results of the subtests are found in Tables 18 through 23. Table 18 contains the results of Part 1 of Diagnostic Test 3. The results show that the total group of MUST children and the total primary and intermediate groups made statistically significant gains in the visual-auditory perception of the initial consonant blends and digraphs used at the primer level. With regard to Part 2 of Diagnostic Test 3, the results as shown in Table 9 evidence statistically significant gains for the total group and its breakdown into total primary and total intermediate groups. This means that the MUST children significantly improved their reading skill of visually-auditorially perceiving short vowel sounds.

Tables 20 and 21 present the results of Diagnostic Test 4. The significant results indicate that MUST children have improved in their visual-auditory perception of initial consonant substitution and in their ability to use substitution of initial consonants or of final consonants as a word attack skill.

Similarly, the results of Tests 5, and 6 as presented in Tables 22 and 23, evidence that MUST children have significantly improved in their word recognition and comprehension of oral and silent reading passages.

TABLE 17

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE ALLYN DIAGNOSTIC TESTS
FOR C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 63)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	11.64	12.54	19.00	21.74	2.09*
	Intermediate	21	25.38	6.97	42.05	9.95	13.54*
	Total	46	17.91	12.38	29.52	20.76	5.54*
J. M. JONES	Primary	18	18.44	8.80	35.78	16.06	7.13*
	Intermediate	12	26.50	7.79	51.42	11.74	8.30*
	Total	30	21.67	9.19	42.03	16.25	10.53*
L. P. MILES	Primary	3	27.00	7.00	37.67	0.53	A
	Intermediate	2	36.00	0 00	51.50	0.71	A
	Total	5	30.60	6.99	43.20	7.60	A
Total	Primary	46	15.30	11.65	26.78	20.58	5.13*
Total	Intermediate	35	26.37	7.36	45.80	11.16	14.13*
TOTAL		81	20.09	11.40	35.00	19.52	10.19*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 18

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 3, PART 1
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
(TOTAL POSSIBLE SCORE = 10)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.60	3.45	4.24	4.90	1.79
	Intermediate	21	6.62	1.50	7.71	1.71	2.31*
	Total	46	4.34	3.38	5.83	4.14	2.6
J. M. JONES	Primary	18	5.33	2.17	8.33	1.97	5.5
	Intermediate	12	6.17	2.59	9.33	0.78	4.7
	Total	30	5.67	2.34	8.73	1.66	7.44*
L. P. MILES	Primary	3	5.67	1.53	10.00	0.00	A
	Intermediate	2	8.00	0.00	8.50	0.71	A
	Total	5	6.60	1.67	9.40	0.89	A
Total	Primary	46	3.87	3.19	6.22	4.38	4.2
Total	Intermediate	35	6.54	1.92	8.31	1.59	4.8
TOTAL		81	5.02	3.01	7.12	3.60	6.00*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 19

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 3, PART II
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 6)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	0.00	0.00	1.28	2.01	3.18*
	Intermediate	21	0.48	0.75	3.57	1.47	8.65*
	Total	46	0.22	0.55	2.33	2.10	6.99*
J. M. JONES	Primary	18	1.56	1.54	1.44	1.14	-0.27
	Intermediate	12	1.33	1.23	4.67	1.61	6.70*
	Total	30	1.47	1.41	2.73	2.08	2.85*
L. P. MILES	Primary	3	0.33	0.58	2.33	0.58	A
	Intermediate	2	2.00	1.41	3.50	0.71	A
	Total	5	1.00	1.22	2.80	0.84	A
Total	Primary	46	0.63	1.22	1.41	1.65	2.67*
Total	Intermediate	35	0.86	1.06	3.94	1.55	11.05*
TOTAL		81	0.73	1.15	2.51	2.04	7.38*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 20

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 4, PART I
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 11)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.84	4.49	5.28	5.61	1.32
	Intermediate	21	9.86	1.96	10.95	0.22	2.77*
	Total	46	6.59	4.65	7.87	5.00	2.0[illegible]
J. M. JONES	Primary	18	6.50	3.54	8.94	3.00	3.4[illegible]
	Intermediate	12	7.00	3.67	10.67	0.65	3.5[illegible]
	Total	30	6.70	3.53	9.63	2.48	4.95*
L. P. MILES	Primary	3	7.33	4.04	10.67	0.58	A
	Intermediate	2	11.00	0.00	11.00	0.00	A
	Total	5	8.80	3.49	10.80	0.45	A
Total	Primary	46	5.11	4.26	7.07	4.92	2.94
Total	Intermediate	35	8.94	2.95	10.86	0.43	4.03
TOTAL		81	6.77	4.19	8.70	4.16	4.54*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 21

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 4, PART II
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
C.W. HILL, J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 4)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.52	1.81	1.92	2.04	1.19
	Intermediate	21	3.05	1.32	3.36	0.48	2.79*
	Total	46	2.22	1.76	2.80	1.81	2.60*
J. M. JONES	Primary	18	2.06	1.59	3.33	1.19	3.05*
	Intermediate	12	2.58	1.24	3.67	1.15	2.40*
	Total	30	2.27	1.46	3.47	1.17	3.94*
L. P. MILES	Primary	3	4.00	0.00	4.00	0.00	A
	Intermediate	2	4.00	0.00	4.00	0.00	A
	Total	5	4.00	0.00	4.00	0.00	A
Total	Primary	46	1.89	1.75	2.61	1.83	2.85*
Total	Intermediate	35	2.94	1.28	3.80	0.76	3.69*
TOTAL		81	2.35	1.64	3.12	1.58	4.47*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 22

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 5,
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 15)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.00	3.03	3.24	4.68	1.46
	Intermediate	21	2.48	2.29	7.71	3.33	9.21*
	Total	46	2.22	2.70	5.28	4.67	5.0
J. M. JONES	Primary	18	1.33	1.50	7.11	5.34	5.2
	Intermediate	12	3.08	1.83	11.08	5.37	6.0
	Total	30	2.03	1.83	8.70	5.90	7.8
L. P. MILES	Primary	3	4.33	1.53	5.00	0.00	A
	Intermediate	2	4.50	0.71	10.00	0.00	A
	Total	5	4.40	1.14	7.00	2.74	A
Total	Primary	46	1.89	2.52	4.87	5.30	4.2
Total	Intermediate	35	2.80	2.11	9.00	4.32	10.3
TOTAL		81	2.28	2.38	6.65	5.29	8.6

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

TABLE 23

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF DIAGNOSTIC TEST 6,
OF THE ALLYN-BACON DIAGNOSTIC TESTS FOR
C.W. HILL, J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 17)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.68	3.00	3.04	4.58	1.66
	Intermediate	21	2.90	2.95	8.24	4.50	6.22*
	Total	46	2.24	3.01	5.41	5.20	4.34*
J. M. JONES	Primary	18	1.67	1.91	6.61	6.23	4.32*
	Intermediate	12	6.33	3.06	12.00	6.19	3.96*
	Total	30	3.53	3.33	8.77	6.70	5.94*
L. P. MILES	Primary	3	5.33	1.15	5.67	0.58	A
	Intermediate	2	6.50	2.12	14.50	2.12	A
	Total	5	5.80	1.48	9.20	4.97	A
Total	Primary	46	1.91	2.66	4.61	5.40	3.96*
Total	Intermediate	35	4.29	3.35	9.89	5.38	7.94*
TOTAL		81	2.94	3.18	6.89	5.97	7.67*

* Statistically significant at the .05 level of probability

A – t-tests were not reported for sample containing less than 10 students

7. Stanford Diagnostic Reading Test

The Stanford Diagnostic Reading Test is comprised of 7 subtests:

Test 1: Reading Comprehension. This test establishes the general reading level of the pupil in terms of his ability to understand the printed word as a form of communication. The paragraphs contain a wide variety of subject-matter content, including science, social studies, health, etc.; the questions require understanding of stated content, perception of important details, or drawing reasonable in ferences from the paragraphs. Another way of looking at it would be to say that Test 1 determines the pupil's ability to utilize the skills assessed by the remaining tests.

Test 2: Vocabulary. The items of the vocabulary test are also taken from a variety of subject-matter areas. The items, including the choices, are read to the pupils; thus the test is one of auditory vocabulary. The items assess a common meaning of each word tested, and the distractors are judged to be of equal or lesser difficulty than the correct word. The score on this test does not require reading ability, although reading performance and performance on this test are positively correlated.

The selection of words for inclusion was based on consideration of the frequency of occurrence of the words in children's usage and in material which they may read. The appropriateness of all words included was checked by reference to the research studies on word counts.

Test 3: Auditory Discrimination. Auditory discrimination deals with the pupil's ability to hear similarities and differences among the sounds within words. In this test pupils are required to determine if the two words read by the examiner contain the same sound in the beginnin, middle, or edning of both words. This is essentially a reading readiness skill, and difficulties in this skill are frequently found among poor readers.

Test 4: Syllabication. Syllabication refers to the ability to see the component syllables in words. It is tested here by asking the pupil to find the first syllable in each word. The words themselves are very common in usage among children. Only the most frequently used syllabication rules are tested.

Test 5: Beginning and ending sounds. Test 5 evaluates one of the first word recognition skills taught: the knowledge of the initial and ending sounds of words which begin or end with some of the more common ounds and biends. This is accomplished by means of unambiguous pictures of common objects. Test 5 differs from Test 3 in that Test 3 is entirely auditory in approach, with the teacher producing the sounds, while Test 5 is partially visual, requiring the pupil to recognize certain letter combinations.

Test 6: Blending. Blending refers to the ability to blend the sounds of a word after the word has been divided into meaningful elements and the sound of each element has been determined. Since it requires both the skill to divide words in a useful way and the phonic skill of knowing how each element sounds, it is one of the most complex of the word recognition skills. Test 6 is entirely new in format; the pupils have probably never done an exercise like it. It is imperative, therefore, that the teacher check to see if the pupils understand how to mark the test before administering it.

Test 7: Sound discrimination. This test assesses the pupil's ability to determine the phonemes (sounds) within words, and his knowledge of the common and variant spellings of the phonemes. While in Test 5 the pupil produces letters from given sounds, in Test 7 he produces sounds from given letters. The latter is the more complex process. Table 24 presents the mean raw scores for MUST children on both the pre and post administrations of the total Stanford Diagnostic Reading Test. The results evidence that the total group did make statistically significant progress. The subtests results are contained in Tables 25 through 31.

Table 25 contains the results of the results of the Reading Comprehension subtest. It can be seen that statistically significant progress was made by the total group of MUST children. The mean grade equivalent for the total group's reading comprehension skills was 1.7 in October, 1971, increasing to 2.1 in April, 1972. This indicated that the total group of children receiving MUST experiences progressed 4 months in their reading comprehension ability. However, it should be pointed out that this amount of progress is significant in view of their retardation of approximately 3 years in reading skills. (These students, according to their grade equivalent scores on the Stanford pretest, had been making one month's progress for every three month's instruction.) Therefore, these results indicate that not only has significant progress been made in improving their reading skills but that significant progress has been made in increasing their rate of learning. The total group of children showed significant progress in vocabulary (Table 26) and blending (Table 30). The analyses further revealed that the MUST experiences were not as successful in helping all children to progress in auditory discrimination (Table 27), syllabication (Table 28), and sound discrimination (Table 31).

TABLE 24

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE STANFORD DIAGNOSTIC
READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 255)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	61.50	4.95	125.00	15.56	A
	Intermediate	9	76.00	18.45	169.22	47.23	A
	Total	11	73.36	17.58	161.18	46.14	8.81
L. P. MILES	Primary						
	Intermediate	17	113.76	43.94	201.88	41.61	13.07
	Total	17	113.76	43.94	201.88	41.61	13.07*
Total	Primary	2	61.50	4.95	125.00	15.56	A
Total	Intermediate	26	100.69	40.99	190.58	45.53	15.51*
TOTAL		28	97.89	40.77	185.89	47.16	15.88*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 25

PRE & POST-TEST MEANS STANDARD DEVIATIONS, GRADE LEVELS AND t-VALUE OF THE READING COMPREHENSION SUBTEST OF THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR J.M. JONES AND L.P. MILES SCHOOLS

(TOTAL POSSIBLE SCORE = 42)

		n	Pre-Test Mean	Pre SD	Grade Level	Post-Test Mean	Post SD	Grade Level	t
C. W. HILL	Primary								
	Intermediate								
	Total								
J. M. JONES	Primary	2	8.00	5.66	<1.4	11.00	0.00	1.5	A
	Intermediate	9	8.33	3.12	<1.4	18.89	11.94	2.1	A
	Total	11	8.27	3.32	<1.4	17.45	11.15	2.0	2.76*
L. P. MILES	Primary								
	Intermediate	17	18.47	10.43	2.1	22.06	11.75	2.2	*1.64
	Total	17	1847	10.43	2.1	22.06	11.75	2.2	1.64
Total	Primary	2	8.00	5.66	<1.4	11.00	0.00	1.5	A
Total	Intermediate	26	14.96	9.84	1.7	20.96	11.68	2.1	2.96*
TOTAL		28	14.46	9.71	1.7	20.25	11.54	2.1	3.05*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 26

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE VOCABULARY
SUBTEST OF THE STANDFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES, AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 40)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	15.00	1.41	11.00	5.66	A
	Intermediate	9	18.00	4.33	21.22	9.61	A
	Total	11	17.45	4.08	19.36	9.71	0.71
L. P. MILES	Primary						
	Intermediate	17	15.47	8.60	20.47	6.19	4.40*
	Total	17	15.47	8.60	20.47	6.19	4.40*
Total	Primary	2	15.00	1.41	11.00	5.66	A
Total	Intermediate	26	16.35	7.41	20.73	7.36	3.42
TOTAL		28	16.25	7.14	20.04	7.61	2.99

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 27

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE AUDITORY DISCRIMINATION
SUBTEST OF THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 45)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	14.00	1.41	22.50	7.78	A
	Intermediate	9	15.44	8.14	23.56	7.06	A
	Total	11	15.18	7.32	23.36	6.77	5.82*
L. P. MILES	Primary						
	Intermediate	17	27.06	7.23	27.82	12.28	0.22
	Total	17	27.06	7.23	27.82	12.28	0.22
Total	Primary	2	14.00	1.41	22.50	7.78	A
Total	Intermediate	26	23.04	9.30	26.35	10.31	1.71
TOTAL		28	22.39	9.26	26.07	10.55	2.01

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 28

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE SYLLABICATIONS
SUBTEST OF THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 20)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	4.50	0.71	4.50	3.54	A
	Intermediate	9	7.44	2.19	10.33	3.39	2.9
	Total	11	6.91	2.30	9.27	4.00	2.4
L. P. MILES	Primary						
	Intermediate	17	8.53	5.25	8.94	3.58	0.39
	Total	17	8.53	5.25	8.94	3.58	0.3
Total	Primary	2	4.50	0.71	4.50	3.54	A
Total	Intermediate	26	8.15	4.41	9.42	3.51	1.61
TOTAL		28	7.89	4.35	9.07	3.68	1.57

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 29

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE BEGINNING AND ENDING SOUNDS
SUBTEST OF THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 36)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	9.50	0.71	13.50	7.78	A
	Intermediate	9	14.78	2.39	20.78	4.87	A
	Total	11	13.82	3.03	19.45	5.80	3.94*
L. P. MILES	Primary						
	Intermediate	17	17.53	8.33	21.71	6.25	2.36*
	Total	17	17.53	8.33	21.71	6.25	2.36*
Total	Primary	2	9.50	0.71	13.50	7.78	A
Total	Intermediate	26	16.58	6.93	21.38	5.73	4.43*
TOTAL		28	16.07	6.92	20.32	6.07	4.57*

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 30

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE BLENDING SUBTEST OF
THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 36)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	1.00	1.41	52.00	15.56	A
	Intermediate	9	3.44	2.96	65.56	26.00	A
	Total	11	3.00	2.86	63.09	24.39	8.2[illegible]*
L. P. MILES	Primary						
	Intermediate	17	14.47	10.31	87.53	12.46	40.97*
	Total	17	14.47	10.31	87.53	12.46	40.97*
Total	Primary	2	1.00	1.41	52.00	15.56	A
Total	Intermediate	26	10.65	9.98	79.92	20.72	21.1[illegible]
TOTAL		28	9.96	9.93	77.93	21.45	21.1[illegible]

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

TABLE 31

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF THE SOUND DISCRIMINATION
SUBTEST OF THE STANFORD DIAGNOSTIC READING TEST - LEVEL I FOR
J.M. JONES AND L.P. MILES SCHOOLS
(TOTAL POSSIBLE SCORE = 36)

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary						
	Intermediate						
	Total						
J. M. JONES	Primary	2	9.50	0.71	10.50	2.12	A
	Intermediate	9	8.56	5.00	8.89	2.80	A
	Total	11	8.72	4.50	9.18	2.67	0.36
L. P. MILES	Primary						
	Intermediate	17	12.24	4.62	13.35	3.46	0.35
	Total	17	12.24	4.62	13.35	3.46	0.35
Total	Primary	2	9.50	0.71	10.50	2.12	A
Total	Intermediate	26	10.96	4.98	11.81	3.86	0.35
TOTAL		28	10.86	4.81	11.71	3.75	0.92

* Statistically significant at the .05 level of probability

A - t-tests were not reported for sample containing less than 10 students

8. Behavior Rating Scale

The Behavior Rating Scale consists of 28 items. Each item is a descriptive phrase, such as - "is able to concentrate on things." The Scales were completed by the regular classroom teacher. The teacher checked one of the following categories for each of the items:

1. Does not describe: never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent.

Tables 32 through 59 present the mean scores for the children receiving MUST experiences on both the pre and post-test administrations of the Behavior Rating Scale. The MUST children displayed positive increases in the following categories (statistically significant increases are starred):

*A. is able to concentrate on things
B. is alert in class
C. is popular with classmates
*D. finishes his classroom assignments
E. works well by himself

A closer examination of the analyses revealed that items pertaining most directly to affect showed either no gain or a negative trend. However, it should be remembered that these questionnaires were completed by the regular classroom teacher. The regular teacher is confronted not only with accepting the resource room concept but also with accepting the statements of the MUST children showing a definite, strong preference for the resource room.

TABLE 32

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 1
ON BEHAVIOR RATING SCALE -
"is able to concentrate on things"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.24	1.01	3.32	1.22	0.37
	Intermediate	31	2.58	1.09	2.84	0.90	1.76
	Total	56	2.88	1.10	3.05	1.07	1.43
J. M. JONES	Primary	14	2.86	0.80	2.64	1.01	-0.54
	Intermediate	20	2.15	1.14	2.90	0.91	2.45*
	Total	34	2.44	1.08	2.79	0.95	1.40
L. P. MILES	Primary	10	2.70	0.82	2.90	1.10	0.69
	Intermediate	2	2.50	0.71	2.50	0.71	A
	Total	12	2.67	0.78	2.83	1.03	0.62
Total	Primary	49	3.02	0.95	3.04	1.15	0.12
Total	Intermediate	53	2.42	1.10	2.85	0.89	2.92*
TOTAL		102	2.71	1.07	2.94	1.02	2.09*

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often, more than usual
5. Very frequently; describes to considerable extent

TABLE 33

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 2
ON BEHAVIOR RATING SCALE -
"is disruptive and boisterous"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.12	1.01	2.60	0.91	2.61*
	Intermediate	31	2.42	1.06	2.45	0.99	0.27
	Total	56	2.29	1.04	2.52	0.95	2.15*
J. M. JONES	Primary	14	2.36	1.28	2.21	1.63	-0.25
	Intermediate	20	2.25	1.29	2.50	1.19	0.62
	Total	34	2.29	1.27	2.38	1.37	0.27
L. P. MILES	Primary	10	2.60	1.51	2.60	1.26	0.00
	Intermediate	2	2.00	1.41	1.50	0.71	A
	Total	12	2.50	1.45	2.42	1.24	-0.25
Total	Primary	49	2.29	1.19	2.49	1.21	1.00
Total	Intermediate	53	2.34	1.14	2.43	1.07	0.57
TOTAL		102	2.31	1.16	2.46	1.13	1.13

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 34

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 3
ON BEHAVIOR RATING SCALE -
"is passed over or slighted or if things go wrong, is inclined to sulk"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.40	1.15	2.48	0.96	0.37
	Intermediate	31	2.65	1.23	2.58	1.03	-0.35
	Total	56	2.54	1.19	2.54	0.99	0.00
J. M. JONES	Primary	14	2.07	0.47	2.36	1.28	0.69
	Intermediate	20	2.05	1.32	2.65	1.18	1.50
	Total	34	2.06	1.04	2.53	1.21	1.64
L. P. MILES	Primary	10	2.10	0.74	2.10	0.74	0.00
	Intermediate	2	1.00	1.41	2.00	1.41	A
	Total	12	1.92	0.90	2.08	0.79	0.43
Total	Primary	49	2.24	0.92	2.37	1.01	0.71
Total	Intermediate	53	2.36	1.30	2.58	1.08	1.15
TOTAL		102	2.30	1.13	2.48	1.05	1.35

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often: more than usual
5. Very frequently; describes to considerable extent

TABLE 35

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 4
ON BEHAVIOR RATING SCALE -
"is interested in schoolwork"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	4.32	0.85	3.84	1.31	-2.61*
	Intermediate	31	3.03	1.08	2.94	0.85	-0.65
	Total	56	3.61	1.17	3.34	1.16	-2.27*
J. M. JONES	Primary	14	3.00	0.39	2.79	1.48	-0.54
	Intermediate	20	2.35	1.23	3.05	0.94	1.85
	Total	34	2.62	1.01	2.94	1.18	1.15
L. P. MILES	Primary	10	3.40	1.17	3.40	1.17	0.00
	Intermediate	2	2.00	1.41	3.00	0.00	A
	Total	12	3.17	1.27	3.33	1.07	0.62
Total	Primary	49	3.76	1.01	3.45	1.39	-1.98
Total	Intermediate	53	2.74	1.18	2.98	0.87	1.39
TOTAL		102	3.23	1.21	3.21	1.16	-0.16

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 36

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 5
ON BEHAVIOR RATING SCALE -
"is alert in class"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.20	1.00	3.08	1.08	-0.59
	Intermediate	31	2.77	1.02	2.68	0.91	-0.63
	Total	56	2.96	1.03	2.86	1.00	-0.90
J. M. JONES	Primary	14	2.71	0.99	2.43	1.50	-0.67
	Intermediate	20	1.75	1.02	2.85	0.87	3.93*
	Total	34	2.15	1.10	2.68	1.17	2.00
L. P. MILES	Primary	10	2.80	1.32	3.30	1.42	2.24*
	Intermediate	2	2.00	0.00	2.50	0.71	A
	Total	12	2.75	0.75	3.17	0.94	1.45
Total	Primary	49	2.98	0.97	2.94	1.21	-0.21
Total	Intermediate	53	2.38	1.11	2.74	0.88	2.28*
TOTAL		102	2.67	1.08	2.83	1.05	1.42

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 37

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 6
ON BEHAVIOR RATING SCALE -
"demands theattention of the teacher and pupils"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.40	1.19	3.28	1.34	-0.51
	Intermediate	31	2.94	1.06	2.81	0.87	-0.68
	Total	56	3.14	1.14	3.02	1.12	-0.85
J. M. JONES	Primary	14	2.36	0.74	2.57	1.40	0.54
	Intermediate	20	2.20	1.24	2.50	0.83	0.97
	Total	34	2.26	1.05	2.53	1.08	1.10
L. P. MILES	Primary	10	2.80	0.79	3.30	0.95	1.63
	Intermediate	2	2.50	0.71	2.50	0.71	A
	Total	12	2.67	1.23	3.17	1.34	2.57*
Total	Primary	49	2.98	1.18	3.08	1.38	0.60
Total	Intermediate	53	2.62	1.16	2.68	0.85	0.35
TOTAL		102	2.79	1.18	2.87	1.15	0.67

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 38

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 7
ON BEHAVIOR RATING SCALE -
"displays feelings of inferiority"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.28	1.06	2.80	1.33	1.92
	Intermediate	31	2.61	1.09	2.84	0.93	1.27
	Total	56	2.46	1.08	2.82	1.15	2.29*
J. M. JONES	Primary	14	2.71	0.99	2.14	1.10	-1.42
	Intermediate	20	1.80	1.15	2.80	0.77	3.34*
	Total	34	2.17	1.17	2.53	0.96	1.29
L. P. MILES	Primary	10	2.10	1.10	2.20	1.14	0.29
	Intermediate	2	1.50	0.71	2.00	0.00	A
	Total	12	2.00	1.04	2.17	1.03	0.56
Total	Primary	49	2.37	1.05	2.49	1.28	0.61
Total	Intermediate	53	2.26	1.16	2.79	0.86	3.29*
TOTAL		102	2.31	1.11	2.65	1.09	2.59*

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 39

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 8
ON BEHAVIOR RATING SCALE -
"is popular with classmates"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	4.32	0.80	4.44	0.65	0.90
	Intermediate	31	3.42	0.89	3.29	0.78	-0.94
	Total	56	3.82	0.96	3.80	0.92	-0.18
J. M. JONES	Primary	14	2.86	0.86	2.86	0.86	0.00
	Intermediate	20	2.55	1.05	3.15	0.81	1.93
	Total	34	2.68	0.98	3.03	0.83	1.50
L. P. MILES	Primary	10	3.70	1.57	4.00	1.05	0.90
	Intermediate	2	3.00	1.41	3.00	0.00	A
	Total	12	3.58	1.51	3.83	1.03	0.82
Total	Primary	49	3.78	1.18	3.90	1.05	0.90
Total	Intermediate	53	3.08	1.03	3.23	0.78	1.00
TOTAL		102	3.41	1.15	3.55	0.97	1.35

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 40

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 9
ON BEHAVIOR RATING SCALE -
"is stubborn"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.48	1.16	3.84	4.16	1.39
	Intermediate	31	2.71	1.19	2.74	1.18	0.16
	Total	56	2.61	1.17	3.23	2.94	1.30
J. M. JONES	Primary	14	2.21	1.05	2.21	1.37	0.00
	Intermediate	20	2.15	1.14	2.75	1.21	1.41
	Total	34	2.18	1.09	2.53	1.28	1.05
L. P. MILES	Primary	10	2.20	1.03	1.70	1.41	-1.24
	Intermediate	2	2.00	0.00	2.00	0.00	A
	Total	12	2.17	0.94	1.75	1.36	-1.16
Total	Primary	49	2.35	1.09	2.94	3.23	1.42
Total	Intermediate	53	2.47	1.17	2.72	1.18	1.22
TOTAL		102	2.41	1.13	2.82	2.39	1.32

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom, rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 41

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 10
ON BEHAVIOR RATING SCALE -
"companions find it difficult to get along with him"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.92	0.70	2.08	0.86	0.81
	Intermediate	31	2.48	0.96	2.39	0.92	-0.59
	Total	56	2.23	0.89	2.25	0.90	0.14
J. M. JONES	Primary	14	2.00	0.88	2.71	1.14	1.73
	Intermediate	20	2.05	1.19	2.30	0.98	0.72
	Total	34	2.03	1.06	2.47	1.05	1.67
L. P. MILES	Primary	10	2.30	1.34	1.60	0.97	-1.56
	Intermediate	2	2.50	0.71	1.50	0.71	A
	Total	12	2.33	1.23	1.58	0.90	-2.00
Total	Primary	49	2.02	0.90	2.16	1.03	0.76
Total	Intermediate	53	2.32	1.05	2.32	0.94	0.00
TOTAL		102	2.18	0.99	2.25	0.98	0.55

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 42

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 11
ON BEHAVIOR RATING SCALE -
"becomes embarrassed easily"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.96	0.84	2.48	0.96	3.16
	Intermediate	31	2.58	0.89	2.58	0.76	0.00
	Total	56	2.30	0.91	2.54	0.85	1.90
J. M. JONES	Primary	14	2.79	0.70	1.93	0.92	-2.37*
	Intermediate	20	1.90	1.07	2.70	0.66	2.79*
	Total	34	2.26	1.02	2.38	0.85	0.45
L. P. MILES	Primary	10	2.10	1.29	2.70	0.82	1.50
	Intermediate	2	1.00	0.00	2.50	0.71	A
	Total	12	1.92	1.24	2.67	0.78	2.14
Total	Primary	49	2.22	0.96	2.37	0.95	0.81
Total	Intermediate	53	2.26	1.02	2.62	0.71	2.23*
TOTAL		102	2.25	0.99	2.50	0.84	2.16*

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 43

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 12
ON BEHAVIOR RATING SCALE -
"is timid in meeting people"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.36	0.99	2.52	0.87	0.85
	Intermediate	31	2.58	1.03	2.81	0.79	1.49
	Total	56	2.48	1.01	2.68	0.83	1.67
J. M. JONES	Primary	14	3.07	0.62	2.36	0.74	-2.92*
	Intermediate	20	1.70	1.34	3.00	0.79	3.51*
	Total	34	2.26	1.29	2.34	0.83	1.60
L. P. MILES	Primary	10	2.70	1.34	3.40	1.35	3.23*
	Intermediate	2	2.50	0.71	3.00	1.41	A
	Total	12	2.67	1.23	3.33	1.30	2.60*
Total	Primary	49	2.63	1.01	2.65	1.01	0.14
Total	Intermediate	53	2.25	1.21	2.89	0.80	3.51*
TOTAL		102	2.43	1.13	2.77	0.91	2.83*

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 44

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 14
ON BEHAVIOR RATING SCALE -
"finishes his classroom assignments"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.40	1.38	3.40	1.32	0.00
	Intermediate	31	2.35	1.05	2.71	0.94	2.01
	Total	56	2.82	1.31	3.02	1.17	1.53
J. M. JONES	Primary	14	3.00	0.88	2.79	1.76	-0.41
	Intermediate	20	1.80	1.58	3.15	0.88	3.28*
	Total	34	2.29	1.45	3.00	1.30	2.05
L. P. MILES	Primary	10	2.50	1.35	2.60	1.35	0.26
	Intermediate	2	2.50	0.71	3.50	0.71	A
	Total	12	2.50	1.24	2.75	1.29	0.71
Total	Primary	49	3.10	1.28	3.06	1.48	-0.22
Total	Intermediate	53	2.15	1.28	2.91	0.93	3.32*
TOTAL		102	2.61	1.36	2.98	1.22	2.64*

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 45

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 15
ON BEHAVIOR RATING SCALE -
"has changeable moods"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.48	1.08	2.60	0.82	0.55
	Intermediate	31	2.65	1.20	2.97	0.98	1.72
	Total	56	2.57	1.14	2.80	0.92	1.64
J. M. JONES	Primary	14	2.64	0.84	2.29	0.83	-1.00
	Intermediate	20	1.85	1.14	2.75	0.85	2.54*
	Total	34	2.18	1.09	2.56	0.86	1.40
L. P. MILES	Primary	10	2.10	0.88	2.50	0.71	1.08
	Intermediate	2	2.00	1.41	2.00	1.41	A
	Total	12	2.08	0.90	2.42	0.79	0.84
Total	Primary	49	2.45	0.98	2.49	0.79	0.24
Total	Intermediate	53	2.32	1.22	2.85	0.95	2.87*
TOTAL		102	2.38	1.11	2.68	0.89	2.31*

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 46

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 16
ON BEHAVIOR RATING SCALE -
"resents even the most gentle criticism of his work"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.44	0.87	2.36	0.57	-0.44
	Intermediate	31	2.55	1.15	2.42	0.99	-0.70
	Total	56	2.50	1.03	2.39	0.82	-0.83
J. M. JONES	Primary	14	2.00	0.78	2.07	0.92	0.23
	Intermediate	20	1.80	0.95	2.35	0.88	1.91
	Total	34	1.38	0.88	2.24	0.89	1.61
L. P. MILES	Primary	10	1.80	0.92	1.80	1.23	0.00
	Intermediate	2	1.00	0.00	1.50	0.71	A
	Total	12	1.67	0.89	1.75	1.14	0.19
Total	Primary	49	2.18	0.88	2.16	0.85	-0.13
Total	Intermediate	53	2.21	1.13	2.36	0.94	0.93
TOTAL		102	2.20	1.02	2.26	0.90	0.60

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 47

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 17
ON BEHAVIOR RATING SCALE -
"seems to be off in a world of his own"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.04	1.43	3.28	1.34	0.81
	Intermediate	31	3.45	1.31	3.26	1.00	-0.88
	Total	56	3.27	1.37	3.26	1.15	0.00
J. M. JONES	Primary	14	2.36	1.22	1.86	1.03	-1.29
	Intermediate	20	2.45	1.00	2.70	0.92	0.77
	Total	34	2.41	1.08	2.35	1.04	-0.23
L. P. MILES	Primary	10	2.70	1.05	2.70	0.95	0.00
	Intermediate	2	3.00	0.00	2.00	0.00	A
	Total	12	2.75	0.97	2.58	0.90	-0.39
Total	Primary	49	2.78	1.31	2.76	1.32	-0.10
Total	Intermediate	53	3.06	1.26	3.00	1.00	-0.32
TOTAL		102	2.92	1.29	2.88	1.16	-0.28

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 48

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 18
ON BEHAVIOR RATING SCALE -
"maintains same facial expression
(blank stare or far-away look)"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.56	1.21	2.72	0.98	0.63
	Intermediate	31	3.48	1.21	3.03	0.95	-2.00
	Total	56	3.06	1.25	2.89	0.97	-1.07
J. M. JONES	Primary	14	2.57	1.01	2.00	1.24	-1.33
	Intermediate	20	2.20	1.36	3.65	4.39	1.39
	Total	34	2.35	1.23	2.97	3.52	0.94
L. P. MILES	Primary	10	2.70	1.16	2.40	1.26	-0.90
	Intermediate	2	4.00	1.41	1.50	0.71	A
	Total	12	2.92	1.24	2.25	1.22	-1.61
Total	Primary	49	2.59	1.08	2.45	1.14	-0.77
Total	Intermediate	53	3.02	1.41	3.21	2.79	0.43
TOTAL		102	2.18	1.27	2.84	2.18	0.12

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 49

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 19
ON BEHAVIOR RATING SCALE -
"is uncooperative"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.32	0.90	2.36	0.76	0.25
	Intermediate	31	2.81	1.49	2.42	1.03	-1.53
	Total	56	2.59	1.28	2.39	0.91	-1.24
J. M. JONES	Primary	14	2.21	0.80	2.71	1.59	1.24
	Intermediate	20	2.65	1.23	2.40	1.14	-0.63
	Total	34	2.47	1.08	2.53	1.33	0.20
L. P. MILES	Primary	10	2.30	1.16	1.80	1.03	-3.00*
	Intermediate	2	2.50	2.12	1.50	0.71	A
	Total	12	2.33	1.23	1.75	0.97	-3.02*
Total	Primary	49	2.29	0.91	2.35	1.13	0.41
Total	Intermediate	53	2.74	1.39	2.38	1.06	-1.70
TOTAL		102	2.52	1.20	2.36	1.09	-1.18

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 50

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 20
ON BEHAVIOR RATING SCALE -
"is tired and listless - little energy"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.56	0.58	1.33	0.53	2.55*
	Intermediate	31	2.71	1.40	2.45	0.81	-1.03
	Total	56	2.20	1.24	2.20	0.74	0.00
J. M. JONES	Primary	14	2.64	1.33	2.00	0.96	-1.42
	Intermediate	20	2.45	1.10	2.70	0.92	1.10
	Total	34	2.53	1.19	2.42	0.99	-0.49
L. P. MILES	Primary	10	2.00	1.15	2.00	0.82	0.00
	Intermediate	2	3.00	1.41	1.50	0.71	A
	Total	12	2.17	1.19	1.92	0.79	-1.00
Total	Primary	49	1.96	1.06	1.94	0.72	-0.13
Total	Intermediate	53	2.62	1.27	2.51	0.87	-0.64
TOTAL		102	2.30	1.22	2.24	0.85	-0.58

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often, more than usual
5. Very frequently; describes to considerable extent

TABLE 51

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 21
ON BEHAVIOR RATING SCALE -
"displays little interest in his environment"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.00	0.76	2.16	0.55	0.35
	Intermediate	31	3.19	1.33	2.90	0.93	-1.12
	Total	56	2.66	1.25	2.57	0.87	-0.53
J. M. JONES	Primary	14	2.71	0.83	2.43	1.50	-0.59
	Intermediate	20	2.60	1.27	2.90	0.97	1.06
	Total	34	2.65	1.10	2.71	1.22	0.23
L. P. MILES	Primary	10	2.50	1.65	2.60	1.26	0.26
	Intermediate	2	3.00	1.41	3.00	2.72	A
	Total	12	2.58	1.56	4.00	5.17	1.04
Total	Primary	49	2.31	1.04	2.33	1.05	0.11
Total	Intermediate	53	2.96	1.32	3.21	2.53	0.69
TOTAL		102	2.65	1.23	2.78	2.00	0.67

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 52

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 23
ON BEHAVIOR RATING SCALE -
"shows a dislike for school"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.68	0.63	1.88	0.53	1.15
	Intermediate	31	2.29	1.57	2.10	0.83	-0.73
	Total	56	2.02	1.27	2.00	0.71	-0.11
J. M. JONES	Primary	14	2.21	0.80	1.57	0.76	-1.83
	Intermediate	20	1.65	0.88	2.40	0.88	3.00
	Total	34	1.88	0.88	2.06	0.92	0.76
L. P. MILES	Primary	10	1.20	0.63	1.70	0.82	1.62
	Intermediate	2	1.00	0.00	1.50	0.71	A
	Total	12	1.17	0.58	1.67	0.78	1.71
Total	Primary	49	1.73	0.76	1.76	0.66	0.13
Total	Intermediate	53	2.00	1.36	2.19	0.86	1.03
TOTAL		102	1.87	1.11	1.98	0.80	0.89

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 53

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 24
ON BEHAVIOR RATING SCALE -
"daydreams"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.00	1.35	3.28	1.10	0.94
	Intermediate	31	3.19	1.19	2.81	8.79	-2.11*
	Total	56	3.11	1.26	3.02	0.96	-0.52
J. M. JONES	Primary	14	2.29	1.14	1.86	0.86	-0.95
	Intermediate	20	2.20	1.32	2.70	1.03	1.13
	Total	34	2.24	1.23	2.35	1.04	0.36
L. P. MILES	Primary	10	2.40	0.97	2.70	0.82	0.32
	Intermediate	2	3.00	0.00	1.50	0.71	A
	Total	12	2.51	0.90	2.50	0.90	0.00
Total	Primary	49	2.67	1.25	2.76	1.15	0.38
Total	Intermediate	53	2.81	1.30	2.72	0.91	-0.45
TOTAL		102	2.75	1.27	2.74	1.02	-0.07

* Statistically significant at the .05 level of probability

A - t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 54

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 25
ON BEHAVIOR RATING SCALE -
"works well by himself"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	3.16	1.14	3.36	1.25	0.71
	Intermediate	31	2.48	1.29	2.68	1.08	0.68
	Total	56	2.79	1.26	2.98	1.20	0.93
J. M. JONES	Primary	14	3.36	0.93	2.50	1.45	-1.67
	Intermediate	20	2.15	1.31	3.35	0.75	3.33*
	Total	34	2.65	1.30	3.00	1.15	1.03
L. P. MILES	Primary	10	2.60	1.07	2.80	1.14	0.33
	Intermediate	2	2.00	1.41	2.50	0.71	A
	Total	12	2.50	1.09	2.75	1.06	0.54
Total	Primary	49	3.10	1.08	3.00	1.32	-0.43
Total	Intermediate	53	2.34	1.29	2.92	1.00	2.59*
TOTAL		102	2.71	1.25	2.96	1.16	1.54

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom, rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 55

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 26
ON BEHAVIOR RATING SCALE -
"gives up when faced with difficulty"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.72	1.28	2.64	1.11	-0.26
	Intermediate	31	3.22	1.25	3.06	1.06	-1.22
	Total	56	3.05	1.29	2.88	1.10	-0.99
J. M. JONES	Primary	14	2.86	1.35	3.57	1.45	1.30
	Intermediate	20	2.25	1.48	3.15	0.99	2.07
	Total	34	2.50	1.44	3.32	1.20	2.45*
L. P. MILES	Primary	10	2.70	0.82	3.10	1.29	0.84
	Intermediate	2	3.00	1.41	2.50	0.71	A
	Total	12	2.75	0.87	3.00	1.21	0.61
Total	Primary	49	2.76	1.20	3.00	1.29	1.01
Total	Intermediate	53	2.91	1.41	3.08	1.02	0.78
TOTAL		102	2.83	1.31	3.04	1.15	1.27

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 56

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 27
ON BEHAVIOR RATING SCALE -
"feels shy when the center of attention"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.52	0.87	2.56	0.77	0.20
	Intermediate	31	2.74	1.48	2.68	0.91	-0.22
	Total	56	2.64	1.24	2.63	0.84	-0.10
J. M. JONES	Primary	14	3.36	0.84	1.93	0.73	-4.16*
	Intermediate	20	1.95	1.32	3.15	0.81	3.74*
	Total	34	2.53	1.33	2.65	0.98	0.36
L. P. MILES	Primary	10	3.10	1.45	3.00	1.33	-0.21
	Intermediate	2	1.50	2.12	2.50	0.71	A
	Total	12	2.83	1.59	2.92	1.24	0.17
Total	Primary	49	2.88	1.05	2.47	0.96	-2.11*
Total	Intermediate	53	2.40	1.47	2.85	0.89	1.96
TOTAL		102	2.63	1.30	2.67	0.94	0.25

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom, rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 57

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS
AND t-VALUE OF ITEM NO. 28
ON BEHAVIOR RATING SCALE -
"shows little interest in classroom routine"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.20	0.82	2.48	0.96	1.43
	Intermediate	31	3.16	1.55	2.94	1.03	-0.93
	Total	56	2.73	1.36	2.73	1.02	0.00
J. M. JONES	Primary	14	2.71	0.83	3.00	1.30	0.72
	Intermediate	20	2.30	1.38	2.70	0.36	1.09
	Total	34	2.47	1.19	2.82	1.06	1.32
L. P. MILES	Primary	10	2.90	1.29	2.10	0.88	-3.21*
	Intermediate	2	3.50	2.12	1.00	0.00	A
	Total	12	3.00	1.35	1.92	0.90	-3.22*
Total	Primary	49	2.49	0.96	2.55	1.08	0.36
Total	Intermediate	53	2.85	1.54	2.77	1.01	-0.35
TOTAL		102	2.68	1.30	2.67	1.05	-0.07

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 53

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS

AND t-VALUE OF ITEM NO. 29

ON BEHAVIOR RATING SCALE -

"does not participate in group activities, stays in background"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	1.96	0.93	2.24	0.93	1.57
	Intermediate	31	2.87	1.50	2.84	1.00	-0.14
	Total	56	2.46	1.35	2.57	1.01	0.70
J. M. JONES	Primary	14	3.00	1.47	2.43	0.94	-1.10
	Intermediate	20	2.65	1.57	3.20	1.11	1.27
	Total	34	2.79	1.51	2.88	1.09	0.26
L. P. MILES	Primary	10	2.80	1.23	2.50	1.27	-0.50
	Intermediate	2	3.50	0.71	1.50	0.71	A
	Total	12	2.92	1.16	2.33	1.23	-1.10
Total	Primary	49	2.43	1.24	2.35	1.00	-0.33
Total	Intermediate	53	2.81	1.49	2.92	1.07	0.51
TOTAL		102	2.63	1.39	2.65	1.07	0.13

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewnat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

TABLE 59

PRE & POST-TEST MEANS AND STANDARD DEVIATIONS

AND t-VALUE OF ITEM NO. 30

ON BEHAVIOR RATING SCALE -

"can be trusted to carry out instructions promptly and attentively"

		n	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t
C. W. HILL	Primary	25	2.92	1.19	3.12	1.27	0.84
	Intermediate	31	3.10	1.30	2.52	0.93	-2.89
	Total	56	3.02	1.24	2.79	1.12	-1.44
J. M. JONES	Primary	14	3.36	1.01	2.50	1.65	-1.61
	Intermediate	20	2.05	1.32	3.30	1.13	3.05*
	Total	34	2.59	1.35	2.97	1.40	1.04
L. P. MILES	Primary	10	2.70	1.25	3.10	1.20	1.18
	Intermediate	2	2.50	0.71	3.00	1.41	A
	Total	12	2.67	1.15	3.08	1.16	1.24
Total	Primary	49	3.00	1.15	2.94	1.38	-0.23
Total	Intermediate	53	2.68	1.37	2.83	1.07	0.65
TOTAL		102	2.83	1.27	2.88	1.22	0.31

* Statistically significant at the .05 level of probability

A – t-test were not reported for sample containing less than 10 students

KEY

1. Does not describe; Never
2. Seldom; rarely
3. Occasionally; somewhat descriptive
4. Often; more than usual
5. Very frequently; describes to considerable extent

9. Metropolitan Achievement Tests - Primary 1

The Metropolitan Achievement Tests are a series of measures designed to tell teachers and administrators how much pupils have learned in important content and skill areas of the school curriculum. The Primary test contains the following subtests:

Word Knowledge - 35 items measure extent of pupils' reading vocabulary. Pupils are given a picture of some common object and must select from four words the one word that describes the picture. Words are generally from primary level readers.

Word Analysis - 40 items measure pupils' knowledge of sound-letter relationships or skill in decoding. Pupils must identify a dictated word from among several words with similar configurations and sound patterns.

Reading - 42 items measure pupils' comprehension of written material. Thirteen items require pupils to select one of three easy sentences which best describes a picture. Nineteen items require pupils to read simple paragraphs and answer questions about what they have read.

Mathematics - Part A: Concepts - 35 items measure pupils' understanding of basic mathematical principles and relationships. Items cover counting, place value sets, measurement, etc. Part B: Computation - 27 items measure pupils' ability to add and subtract one - and two-digit numbers with no regrouping.

The results of MUST children from J. M. Jones School on pre and post-test administration of the Primary Level Test are presented in Table 60. Statistically significant results were obtained for the total reading score was 1.65 in October, 1971, increasing to 2.18 in April, 1972. This indicated that the total group of children receiving MUST experiences progressed 5 months in their total reading ability.

TABLE 60

PRE & POST-TEST MEANS, STANDARD DEVIATIONS, AND t-VALUE OF METROPOLITAN ACHIEVEMENT TEST-PRIMARY 1 FOR J.M. JONES SCHOOL

	n	Pre-Test Mean Grade Level	Post-Test Mean Grade Level	t
WORD KNOWLEDGE	43	1.67	2.60	11.97*
WORD ANALYSIS	43	1.45	1.88	6.45*
READING	43	1.59	1.56	-0.35
TOTAL READING	43	1.65	2.18	6.91*
TOTAL MATH	43	1.59	2.16	6.09*
TOTAL				